Spectrum™ Technology Platform

Version 9.0 SP2

SAP Module User's Guide

Pitney Bowes Software

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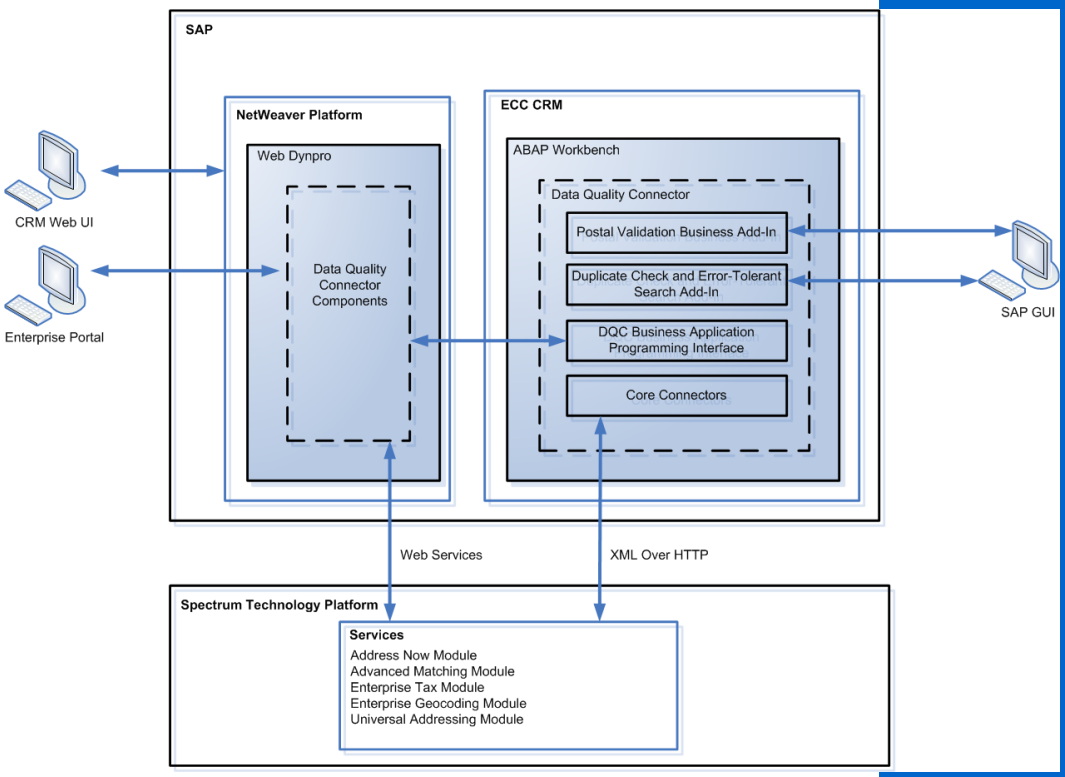
1

SAP Module

The Spectrum™ Technology Platform SAP Module optimizes the quality of your customer, vendor and partner records so you can improve operations across the enterprise.

Because SAP is such a far-reaching application, introducing accurate address data provides equally far-reaching benefits. With data quality for over 220 countries, the SAP Module identifies and manages duplicate records, standardizes and validates addresses, auto-populates missing fields, and gives you a single, integrated view of your customers.

The following diagram illustrates how Spectrum™ Technology Platform integrates with SAP.



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SAP Module Services

The SAP Module consists of the following services which run on the Spectrum™ Technology Platform server. These services provide address validation, deduplication, tax jurisdiction assignment, and geocoding functions.

- **SAP Batch Assign GeoTax Info**—This service identifies the tax districts that apply to a given address. It also corrects and validates addresses.
- **SAP Batch Validate Address**—This service standardizes and validates address data using batch processing.
- **SAP Generate CASS Report**—This service generates a USPS CASS 3553 report. This report is used to obtain postal discounts from the U.S. Postal Service when submitting a mailing with addresses that have been processed through CASS Certified software.
- **SAP Generate Match Key**—This service is used in generating a match key. The match key is generated using Substring, Metaphone, and Consonant algorithms.
- **SAP Generate Match Score**—This service is used in comparing candidate records and generating a score that reflects its similarity. The higher the score means the closer the match.
- **SAP Generate Search Key**—This service generates a search key using metaphone, substring, and consonant algorithms.
- **SAP Generate Search Key Consonant**—Used in Search Key Generation for Consonant Algorithm. A Search Key is used for Duplicate Detection and Error-Tolerant Searching.
- **SAP Generate Search Key Metaphone**—Used in Search Key Generation for Metaphone Algorithm. A Search Key is used for Duplicate Detection and Error-Tolerant Searching.
- **SAP Generate Search Key Substring**—Used in Search Key Generation for Substring Algorithm. A Search Key is used for Duplicate Detection and Error- Tolerant Searching.
- **Validate Address and Assign GeoTAX Info**—This service validates the address and determines tax jurisdictions for the location.
- **Validate Address With Candidates**—This service validates the address. If an address matches multiple addresses in the postal data, it returns the candidate addresses.

SAP Module Databases

The SAP Module relies on other Spectrum™ Technology Platform modules to provide various capabilities such as address standardization and geocoding. Depending on the features you have licensed you may have one or more of the following modules. Each module requires certain reference data (databases) to be installed on the Spectrum™ Technology Platform server.

Note: For instructions on installing these databases, see the *Spectrum™ Technology Platform Installation Guide*.

Address Now Module Database

The Address Now database contains postal data from all supported countries. You can install the entire database or the data for specific countries only. The database is installed on the server. This database is available by subscription from Pitney Bowes Software and is updated monthly.

Universal Addressing Module Databases

Table 1: Universal Addressing Module Databases

Database Name & Description	Required or Optional	Supplier
U.S. Postal Database The U.S. Postal Database is in a Pitney Bowes proprietary format. It contains every house number range in the United States and is updated on a monthly basis. The database files contain the following information: • ZIP + 4® Code • Standardized address elements • City and state information The U.S. Postal Database also contains the data needed to perform Enhanced Street Matching (ESM) and All Street Matching (ASM). ESM and ASM apply extra matching logic to any input address that is not matched through the regular address validation process.	Required for U.S. address processing	Pitney Bowes Software monthly subscription
Canadian Postal Database The Canadian Postal database is in Pitney Bowes Software proprietary format. The database files contain the following information: • Postal code • Standardized address elements • Municipality and province information	Required for Canadian address processing	Pitney Bowes Software monthly subscription
Australia Post Postal Address File Database The Postal Address File is part of Australia Post's Address Matching Approval System (AMAS) program. The database file contains the following information: • Postal code • Standardized address elements	Required for Australian address processing	Pitney Bowes Software monthly subscription
International Postal Database The International Postal Database is a collection of postal address data from around the world. Data from each country is categorized according to the level of data available. The categories are: • **Category A**—Enables the validation and correction of an address's postal code, city name, state/county name, street address elements, and country name. • **Category B**—Enables the validation and correction of an address's postal code, city name, state/county name, and country name. It does not support the validation or correction of street address elements. • **Category C**—Enables the validation and correction of the country name, and the validation of the format of the postal code.	Required for International address processing	Pitney Bowes Software quarterly subscription

Database Name & Description	Required or Optional	Supplier
DPV® Database The Delivery Point Validation database allows you to check the validity of an individual mailing address in the U.S. The DPV database enhances the U.S. Postal database's ability to validate mailing addresses. **Note:** The DPV database also contains the data required for Commercial Mail Receiving Agency (CMRA) processing. Each time an edition of the U.S. Postal database is released, a corresponding edition of the DPV database is released. Although USPS licensing allows the use of the U.S. Postal database beyond the expiration date (with certain restrictions), DPV lookups may not be performed after the expiration date of the DPV database. USPS licensing prohibits using DPV data for the generation of addresses or address lists. To prevent the generation of address lists, the DPV database contains "false positive records." False positive records are artificially manufactured addresses. For each negative response that occurs in a DPV query, a query is made to the False/Positive table in the DPV database. A match to this table will stop DPV processing. USPS licensing also prohibits exporting the DPV data outside the United States.	Optional, but required for CASS Certified™ processing; U.S. addresses only	Pitney Bowes Software monthly subscription
eLOT® Database The Enhanced Line of Travel (eLOT) database is a U.S. address database that ensures that Enhanced Carrier Route mailings are sorted as close as possible to the actual delivery sequence. the eLOT database is required for certain types of postal discounts. You will receive monthly updates to your eLOT database on the same media as the U.S. Postal database. You must install the U.S. Postal database and eLOT database from the same month (i.e., September eLOT data must be processed with a September U.S. Postal database). If the U.S. Postal database and the eLOT database are not from the same month, there may be ZIP + 4® Codes for which eLOT numbers cannot be assigned. The ZIP Code™, ZIP + 4 Code, carrier route code, and the delivery point of an address must be provided to assign a eLOT code.	Optional; U.S. addresses only	Pitney Bowes Software monthly subscription
EWS Database The Early Warning System (EWS) database prevents address validation errors that can result due to a delay in postal data reaching the U.S. Postal database. The EWS database consists of partial address information limited to the ZIP Code™, street name, pre- and post-directionals, and a suffix. For an address record to be	Optional; U.S. addresses only	Download for free from USPS® website

Database Name & Description	Required or Optional	Supplier
EWS-eligible, it must be an address not present on the most recent monthly production U.S. Postal database. The USPS® refreshes the EWS file on a weekly basis (Thursdays). You can download the EWS file from the USPS® website at **ribbs.usps.gov**.		
LACS^{Link}® Database The LACS^{Link} database allows you to correct addresses that have changed as a result of a rural route address converting to street-style address, a PO Box renumbering, or a street-style address changing. USPS licensing prohibits using LACS^{Link} for the generation of addresses or address lists. To prevent the generation of address lists, the LACS^{Link} database contains "false positive records." False positive records are artificially manufactured addresses. For each negative response that occurs in a LACS^{Link} query, a query is made to the False/Positive table in the LACS^{Link} database. A match to this table will stop LACS^{Link} processing. USPS licensing also prohibits exporting the LACS^{Link} database outside the United States	Optional, but required for CASS Certified™ processing; U.S. addresses only	Pitney Bowes Software monthly subscription
RDI™ Database The Residential Delivery Indicator (RDI™) database contains data that can help you determine the best cost for shipping your packages. RDI is similar to DPV in that the RDI data is supplied as hash tables. However, RDI is a much simpler process than DPV in that the standard hash algorithm is only determined for the 9-digit and 11-digit ZIP Code™ rather than the entire address.	Optional; U.S. addresses only	License directly from USPS®
Suite^{Link}™ Database Suite^{Link}™ corrects secondary address information for U.S. business addresses whose secondary address information could not be validated. If Suite^{Link} processing is enabled, Validate Address attempts to match the value in the FirmName field to a database of known firm names. Validate Address then supplies the correct secondary address information.	Optional; U.S. addresses only	Pitney Bowes Software monthly subscription

2

Integrating SAP with Spectrum

In this section:

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Integrating with SAP Web Dynpro

Before continuing verify the following:

- SAP Application, SAP NetWeaver 7.01 with Patch 3 and Spectrum™ Technology Platform is available
- PBS SCA files have been deployed.
- System Landscape Directory (SLD) has been properly configured

To integrate Spectrum™ Technology Platform with SAP Web Dynpro, you need to install supporting databases and dataflows on the Spectrum™ Technology Platform server, and then configure your SAP system to communicate with Spectrum™ Technology Platform. Once you do this, users of SAP Web Dynpro will have access to address validation and geocoding functionality from within SAP Web Dynpro.

1. On the Spectrum™ Technology Platform server, install the databases required to perform address validation, geocoding, and tax jurisdiction assignment and define database resources for each database.

   You must give the database resources the following names.

Database	Required Name for Database Resource
Enterprise Geocoding Module - Canada Database	IGEO_CAN
Enterprise Geocoding Module - U.S. Database	EGM_US
Enterprise Tax Module Database	ETM
Universal Addressing Module - Canada Database	Canada
Universal Addressing Module - Loqate Database	Loqate
Universal Addressing Module - U.S. Database	UAM_US

2. When you install the SAP Module, several dataflow files are automatically installed. Other dataflow files must be manually copied into Spectrum™ Technology Platform.
   a) If you are adding the Address Now Module, Enterprise Tax Module, or Universal Addressing Module to an existing installation, open Spectrum™ Technology Platform Enterprise Designer, select **View** > **Server Explorer**, and delete this dataflow: SAPValidateAddressWithCandidates.
   b) Go to: *SpectrumFolder*\server\modules\dataflows\sap.
   c) Review the following table then copy the applicable dataflow files to:

      SpectrumFolder\server\app\import

If you are installing this set of modules	Copy these dataflow files to the import folder
Address Now Module	SAPValidateAddressWithCandidates.ANOW.df
Address Now Module Universal Addressing Module	SAPGenerateCASSReport.df SAPValidateAddressWithCandidates.ANOW.df ValidateAddressWithCandidates.UAM.df
Address Now Module Enterprise Tax Module Universal Addressing Module	SAPBatchAssignGeoTAXInfo.df SAPGenerateCASSReport.df SAPValidateAddressAndAssignGeoTAXInfo.df SAPValidateAddressWithCandidates.UAM_ANOW_ETM.df ValidateAssignGeoTAXInfo.df
Universal Addressing Module without Loqate	SAPGenerateCASSReport.df ValidateAddressWithCandidates_UAM.df

If you are installing this set of modules	Copy these dataflow files to the import folder
Universal Addressing Module without Loqate Enterprise Tax Module	SAPBatchAssignGeoTAXInfo.df SAPGenerateCASSReport.df SAPValidateAddressAndAssignGeoTAXInfo.df ValidateAddressWithCandidates.UAM_ETM.df ValidateAssignGeoTAXInfo.df
Universal Addressing Module with Loqate	ValidateAddressWithCandidates_UAM_Loqate.df
Universal Addressing Module with Loqate Enterprise Geocoding Module	ValidateAddressWithCandidates_UAM_Loqate_EGM.df
Universal Addressing Module with Loqate Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_ETM.df
Universal Addressing Module with Loqate Enterprise Geocoding Module Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_EGM_ETM.df
Universal Addressing Module, Loqate only	ValidateAddressWithCandidates_Loqate.df
Universal Addressing Module, Loqate only Enterprise Geocoding Module	ValidateAddressWithCandidates_Loqate_EGM.df
Enterprise Geocoding Module	GeocodeUSAddressWithCandidates.df ValidateAddressWithCandidates_EGM.df
Enterprise Tax Module	SAPBatchAssignGeoTAXInfo.df ValidateAssignGeoTAXInfo.df

Note: If errors occur in Management Console or Enterprise Designer, delete the contents of `<WindowsTemporaryDirectory>\g1Assemblies`, where <WindowsTemporaryDirectory> is one of the following: %TMP%, %TEMP%, %USERPROFILE%, or the Windows directory. Typically, C:\Documents and Settings\<USERNAME>\Local Settings\Temp\g1Assemblies. After you delete the contents of this folder log in again.

3. Import .SAR files.

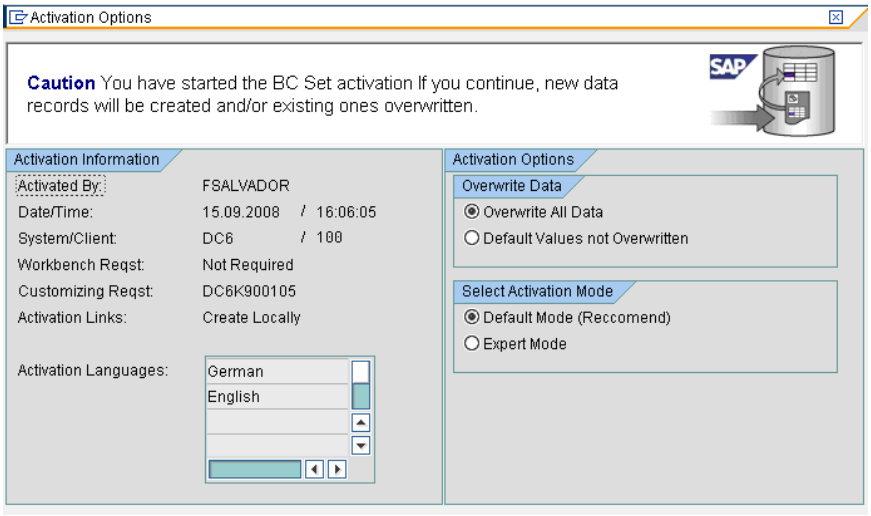
   A .SAR file is a file that contains a third-party add-on package for SAP, such as the Spectrum™ Technology Platform SAP Module. The .SAR file is located on the Spectrum™ Technology Platform installer in the `SAP Objects` folder. For information on importing .SAR files into SAP applications, see your SAP Basis administrator.

4. Activate the BC sets.
   a) Log-on to the client where the settings for the Spectrum™ Technology Platform SAP Module is to be configured.
   b) Enter the transaction code `SCPR20`.

      This activates Business Configuration (BC) sets. This will place the default entries on the Spectrum™ Technology Platform customizing tables.

   c) In the **BC Set** field, enter `/HSGRP1/BCSET_BC_BAS_PV`.

d) Activate it with the options **Overwrite All Data** and **Default Mode**.


Activation Options
Caution You have started the BC Set activation If you continue, new data records will be created and/or existing ones overwritten.
Activation Information
Activated By: FSALVADOR
Date/Time: 15.09.2008 / 16:06:05
System/Client: DC6 / 100
Workbench Reqst: Not Required
Customizing Reqst: DC6K900105
Activation Links: Create Locally
Activation Languages: German English
Activation Options
Overwrite Data
Overwrite All Data
Default Values not Overwritten
Select Activation Mode
Default Mode (Reccomend)
Expert Mode

e) Select and activate the remaining BC sets with the activation options set to **Overwrite All Data** and **Expert Mode**.

Note: Active these BC sets in the order listed.

/HSGRP1/BCSET_BC_BAS_GTX
/HSGRP1/MERGE_SETTINGS
/HSGRP1/BCSET_BUPA_CUSTOM
/HSGRP1/BCSET_BC_BAS_DES

5. Set up the RFC destination.
   a) Enter transaction code `SM59`.
   b) Click **Create**.
   c) In the **RFC Destination** field, enter a name of your choice.
   d) In the **Connection Type** field, enter `G` (HTTP connection to external server).
   e) In the **Description 1** field, enter a meaningful description.
   f) Press the Enter key.
   g) Click the **Technical Settings** tab.
   h) In the **Target Host** field, enter the computer name or IP Address of the Spectrum™ Technology Platform server.
   i) In the **Service No** field enter 8080.
   j) Click the **Special Options** tab.
   k) Select **No Timeout**.
   l) Select **HTTP 1.1**.
   m) After you save, click **Connection Test**.

   Note: If there is a pop-up window, check the **Accept All Further Cookies** box and select YES.

   n) When the test is successful, go to the **Response Body** tab to view the Spectrum™ Technology Platform page.
6. Set up the Spectrum™ Technology Platform Logging Object
   a) Enter transaction code `SLG0`.
   b) Click **New Entries**.
   c) In the **Object** column, enter `/HSGRP1/DQC`.
   d) In the **Object text** column, enter `DQC Logging`.
   e) Save the change.
7. Set up JCO destinations:

a) Go to the NetWeaver Portal Content Administrator URL and log in as J2EE_ADMIN or an account that has an Administrator Privilege.
b) Expand **Deployed Content**, then **pb.com**, then **pb.com/dqc**. On the **Details** window, select the **JCO Connections** tab.
c) Select WD_DQC_MODELDATA_DEST and click **Create**. Complete all the required information to be able to run and test the connection.
d) Repeat the steps and complete the required information for WD_DQC_MODELDATA_DEST.

Note: WD_DQC_MODELDATA_DEST is the Application Data and WD_DQC_RFC_METADATA_DEST is the Dictionary Metadata.

8. Configure the BuildGlobalAddress web service in the SAP Visual Admin:
   a) Go to <drive>:/usr./sap/<system id>/DVEBMGS01/ j2ee/admin and click go.bat and enter J2EE_ADMIN password.
   b) Go to **Cluster** > **Server** > **Services** > **JCo RFC Provider** and select the **Bundles** tab.
   c) Enter all of the information needed by the application and click **Set** to save the changes.
   d) Go to **Cluster** > **Server** > **Services** > **Web Services Security**.
   e) Create a proxy in **Web Services Client** > **sap.com** > **Dynamic WSProxies** with the name `PBBIWebServiceConnectorBGA`.
   f) For the URL, enter:

      ```
      http://<spectrumservername>:<port>/soap/BuildGlobalAddress?wsdl
      ```

      For example,

      ```
      http://MySpectrumServer:8080/soap/BuildGlobalAddress?wsdl
      ```

   g) Restart the application server.
9. If you will be using French address validation, you must install the Data Normalization Module table `cdq-TableLookup-SAP.tba` on the Spectrum™ Technology Platform server. For more information, see the *Spectrum™ Technology Platform Installation Guide*.

Integrating with SAP Interaction Center WebClient

Before continuing verify the following:

- The Interaction Center WebClient user has the CRM_UI_PROFILE parameter ID with IC_AGENT as the Parameter Value
- The duplicate option is activated in SPRO under ICWC (**SPRO** > **CRM** > **ICWC** > **Define Account Identification Profiles**)

To integrate Spectrum™ Technology Platform with SAP Interaction Center WebClient, you need to install supporting databases and dataflows on the Spectrum™ Technology Platform server, and then configure your SAP system to communicate with Spectrum™ Technology Platform. Once you do this, users of SAP Interaction Center WebClient will have access to address validation and geocoding functionality from within SAP Interaction Center WebClient.

1. On the Spectrum™ Technology Platform server, install the databases required to perform address validation, geocoding, and tax jurisdiction assignment and define database resources for each database.

   You must give the database resources the following names.

Database	Required Name for Database Resource
Enterprise Geocoding Module - Canada Database	IGEO_CAN
Enterprise Geocoding Module - U.S. Database	EGM_US
Enterprise Tax Module Database	ETM

Database	Required Name for Database Resource
Universal Addressing Module - Canada Database	Canada
Universal Addressing Module - Loqate Database	Loqate
Universal Addressing Module - U.S. Database	UAM_US

2. When you install the SAP Module, several dataflow files are automatically installed. Other dataflow files must be manually copied into Spectrum™ Technology Platform.
   a) If you are adding the Address Now Module, Enterprise Tax Module, or Universal Addressing Module to an existing installation, open Spectrum™ Technology Platform Enterprise Designer, select **View** > **Server Explorer**, and delete this dataflow: SAPValidateAddressWithCandidates.
   b) Go to: *SpectrumFolder*\server\modules\dataflows\sap.
   c) Review the following table then copy the applicable dataflow files to:

      SpectrumFolder\server\app\import

If you are installing this set of modules	Copy these dataflow files to the import folder
Address Now Module	SAPValidateAddressWithCandidates.ANOW.df
Address Now Module Universal Addressing Module	SAPGenerateCASSReport.df SAPValidateAddressWithCandidates.ANOW.df ValidateAddressWithCandidates.UAM.df
Address Now Module Enterprise Tax Module Universal Addressing Module	SAPBatchAssignGeoTAXInfo.df SAPGenerateCASSReport.df SAPValidateAddressAndAssignGeoTAXInfo.df SAPValidateAddressWithCandidates.UAM_ANOW_ETM.df ValidateAssignGeoTAXInfo.df
Universal Addressing Module without Loqate	SAPGenerateCASSReport.df ValidateAddressWithCandidates_UAM.df
Universal Addressing Module without Loqate Enterprise Tax Module	SAPBatchAssignGeoTAXInfo.df SAPGenerateCASSReport.df SAPValidateAddressAndAssignGeoTAXInfo.df ValidateAddressWithCandidates.UAM_ETM.df ValidateAssignGeoTAXInfo.df
Universal Addressing Module with Loqate	ValidateAddressWithCandidates_UAM_Loqate.df
Universal Addressing Module with Loqate Enterprise Geocoding Module	ValidateAddressWithCandidates_UAM_Loqate_EGM.df
Universal Addressing Module with Loqate Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_ETM.df
Universal Addressing Module with Loqate Enterprise Geocoding Module Enterprise Tax Module	ValidateAddressWithCandidates_UAM_Loqate_EGM_ETM.df
Universal Addressing Module, Loqate only	ValidateAddressWithCandidates_Loqate.df

If you are installing this set of modules	Copy these dataflow files to the import folder
Universal Addressing Module, Loqate only Enterprise Geocoding Module	ValidateAddressWithCandidates_Loqate_EGM.df
Enterprise Geocoding Module	GeocodeUSAddressWithCandidates.df ValidateAddressWithCandidates_EGM.df
Enterprise Tax Module	SAPBatchAssignGeoTAXInfo.df ValidateAssignGeoTAXInfo.df

Note: If errors occur in Management Console or Enterprise Designer, delete the contents of `<WindowsTemporaryDirectory>\g1Assemblies`, where <WindowsTemporaryDirectory> is one of the following: %TMP%, %TEMP%, %USERPROFILE%, or the Windows directory. Typically, C:\Documents and Settings\<USERNAME>\Local Settings\Temp\g1Assemblies. After you delete the contents of this folder log in again.

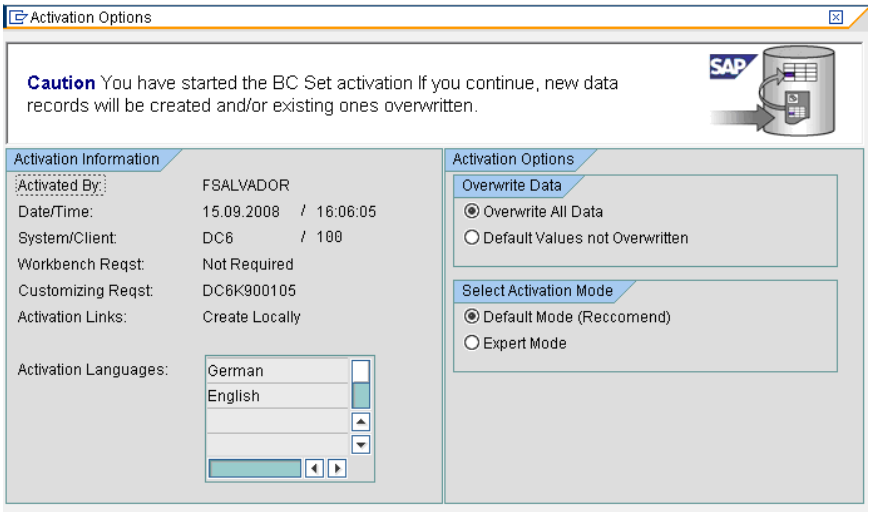
3. Import .SAR files.

   A .SAR file is a file that contains a third-party add-on package for SAP, such as the Spectrum™ Technology Platform SAP Module. The .SAR file is located on the Spectrum™ Technology Platform installer in the `SAP Objects` folder. For information on importing .SAR files into SAP applications, see your SAP Basis administrator.

4. Activate the BC sets.
   a) Log-on to the client where the settings for the Spectrum™ Technology Platform SAP Module is to be configured.
   b) Enter the transaction code `SCPR20`.

      This activates Business Configuration (BC) sets. This will place the default entries on the Spectrum™ Technology Platform customizing tables.

   c) In the **BC Set** field, enter `/HSGRP1/BCSET_BC_BAS_PV`.
   d) Activate it with the options **Overwrite All Data** and **Default Mode**.


Activation Options
Caution You have started the BC Set activation If you continue, new data records will be created and/or existing ones overwritten.
Activation Information
Activated By: FSALVADOR
Date/Time: 15.09.2008 / 16:06:05
System/Client: DC6 / 100
Workbench Reqst: Not Required
Customizing Reqst: DC6K900105
Activation Links: Create Locally
Activation Languages: German English
Activation Options
Overwrite Data
Overwrite All Data
Default Values not Overwritten
Select Activation Mode
Default Mode (Reccomend)
Expert Mode

   e) Select and activate the remaining BC sets with the activation options set to **Overwrite All Data** and **Expert Mode**.

      Note: Active these BC sets in the order listed.

/HSGRP1/BCSET_BC_BAS_GTX
/HSGRP1/MERGE_SETTINGS
/HSGRP1/BCSET_BUPA_CUSTOM
/HSGRP1/BCSET_BC_BAS_DES

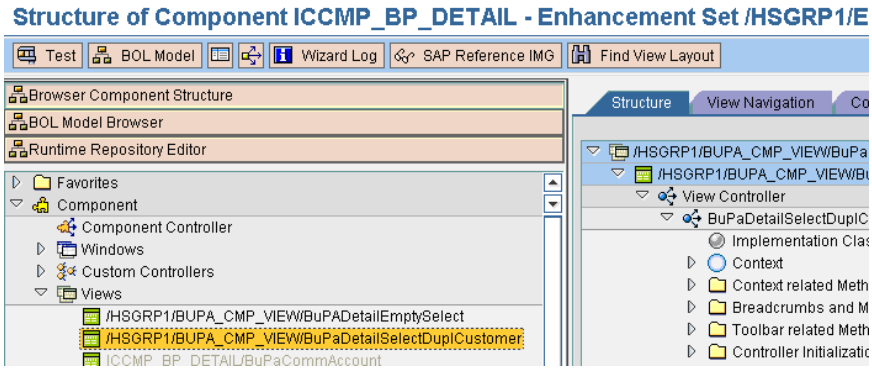
5. Activate the following BC set with activation options set to **Overwrite All Data** and **Expert Mode**.

   /HSGRP1/BCSET_DQC_CUSTOM

6. Activate the BC set for IC WebClient. The BC set is `/HSGRP1/ICWC_SETTINGS`. Specify the activation options **Overwrite Data** and **Expert Mode**.
7. Set up the RFC destination.
   a) Enter transaction code `SM59`.
   b) Click **Create**.
   c) In the **RFC Destination** field, enter a name of your choice.
   d) In the **Connection Type** field, enter `G` (HTTP connection to external server).
   e) In the **Description 1** field, enter a meaningful description.
   f) Press the Enter key.
   g) Click the **Technical Settings** tab.
   h) In the **Target Host** field, enter the computer name or IP Address of the Spectrum™ Technology Platform server.
   i) In the **Service No** field enter 8080.
   j) Click the **Special Options** tab.
   k) Select **No Timeout**.
   l) Select **HTTP 1.1**.
   m) After you save, click **Connection Test**.

      Note: If there is a pop-up window, check the **Accept All Further Cookies** box and select YES.

   n) When the test is successful, go to the **Response Body** tab to view the Spectrum™ Technology Platform page.
8. Set up the Spectrum™ Technology Platform Logging Object
   a) Enter transaction code `SLG0`.
   b) Click **New Entries**.
   c) In the **Object** column, enter `/HSGRP1/DQC`.
   d) In the **Object text** column, enter `DQC Logging`.
   e) Save the change.
9. Enable the Pitney Bowes Software IC WebClient Enhancement Set.
   a) Enter the transaction code `SM30`.
   b) In the **Table/View** field, enter `BSPWDV_EHSET_ASG`.
   c) Click **Maintain**.
   d) Click **New Entries**
   e) In the **Client** field, enter the client number where the enhancement set will take effect.
   f) In the **Enhancement Set** field, enter `/HSGRP1/ENHANCEMENT_SET`.
10. Add the IC WebClient Configurations.
    a) Enter the transaction code `BSP_WD_CMPWB`.
    b) In the **Component** field, enter `ICCMP_DETAIL`.
    c) Click the check icon.
    d) In the **Enhancement Set** field, enter `/HSGRP1/ENHANCEMENT_SET`.
    e) Click **Display**.
    f) Expand the **Views** folder and select **/HSGRP1/BUPA_CMP_VIEW/BuPaDetailSelectDuplCustomer**.



g) Click the **Configuration** tab.

h) On the edit screen select Full Name, Telephone, Street, City and Country context then click the right arrow button and arrange them in this order:

Full Name
Telephone
Street
City
Country

i) Save the configuration.

11. If you will be using French address validation, you must install the Data Normalization Module table `cdq-TableLookup-SAP.tba` on the Spectrum™ Technology Platform server. For more information, see the *Spectrum™ Technology Platform Installation Guide*.

3

Using the SAP Interface

In this section:

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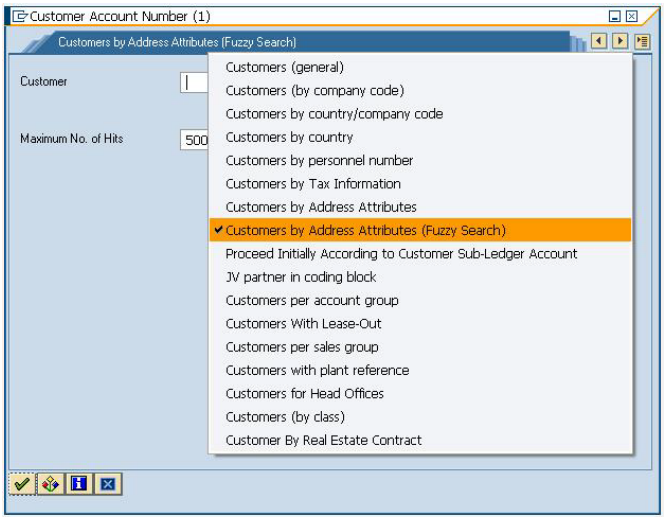
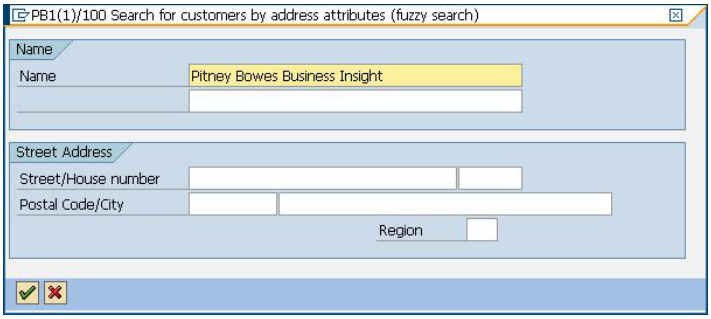
Searching for Records

The SAP modules provide various ways in which you can search records. Error-tolerant searches allow you to find customers, vendors, prospects, or business partners, even if you don't have all their information or the information is incomplete or partly wrong.

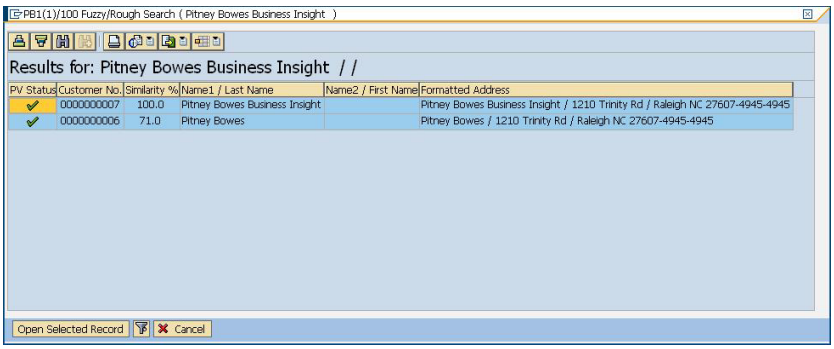
1. When searching for customers, vendors, prospects, or business partners, the error-tolerant search feature allows you to use "Rough" or "Fuzzy" search logic to locate records.



2. Enter any information in any of the fields to perform the error-tolerant search. In this particular case, the information "Pitney Bowes Business Insight" was entered in the name field.



3. Execute the search to display the Results pop-up with a list of possible matches.



4. Select from the given list and click on **Open Selected Record**, or simply click on Cancel to cancel the search.

Address Validation

Address validation is the process of correcting address information and validating addresses against the postal database and is performed on partial or complete records. Address validation is done in several places in the SAP system. Address validation is done whenever address information is created or updated, for example when you create or update a customer record via transaction codes `XD01` and `XD02` or when you create or update a business partner via transaction code `BP` in SAP.

Validating an Address

You can validate an address when creating a business partner so that address data entered into your system is valid.

1. Enter the transaction code `/NBP` to create a new business partner.
2. On the **Address** tab, enter the address for the business partner.
3. Press the F8 key or click the check icon.
4. If the address you entered needs to be corrected, the **Address Changed** window appears, listing the corrected version of the address. If the address you entered matched multiple candidate addresses, the **Address Search** window appears, listing the candidate addresses.
   - Click **Accept Changes** to save the corrected version of the address to the record. If there are multiple addresses listed, select the address you want to use before clicking **Accept Changes**.
   - Click **Accept Current** to keep the address as you entered it.
   - Click the **Advanced** button to access the Advanced Search window. For more information on the Advanced Search window refer to **Validating Address Components** on page 23. This option will be available only if the Simple/Advanced Search option is enabled, and the address entered does not produce a unique result.
   - Click the red "X" to cancel the validation.

   Note: If the Enterprise Tax Module is being used and the Tax Jurisdiction Code is required, the Tax Jurisdiction Code is returned with the address.

   Note: When only the Postal Code, Country, and Region fields are populated, the address list does not show any candidate records in the simple tab and an error message is displayed.

Validating Address Components

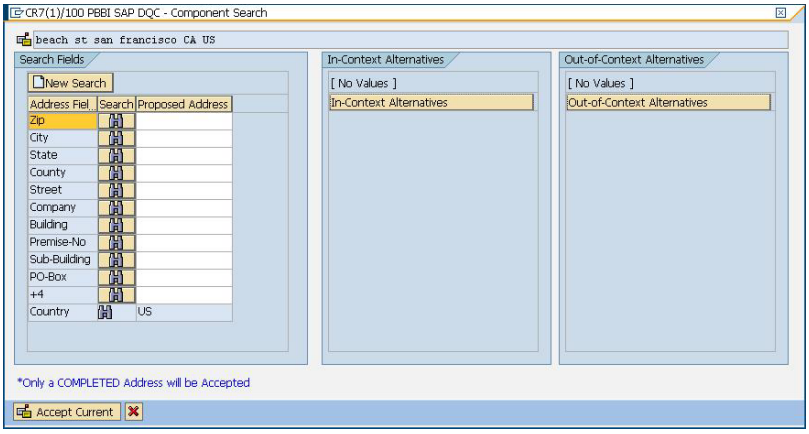
The Advanced Search is helpful when there is uncertainty in the address entered. This feature eases the difficulty of entering and searching even the most complex addresses.

The Component Tab contains Proposed and Current columns. Initially, the 'Proposed' column does not contain any value. This is because the values are selected per field.

Note: This option will be available only if the Simple/Advanced Search option is enabled, and the address entered does not produce a unique result.

1. Enter the address data in SAP.
2. The address goes through the validation process. The Advanced Search Tab screen is displayed with blank fields.
3. To begin a search, click Advanced button. The Advanced Search screen is displayed. On this screen, the entered address is not displayed on the Proposed Address column. The address to be searched has to be typed in the fields.

4. Results are only displayed on the Out-Of-Context Alternatives box when entries are found out of the scope of the search criteria.
5. To begin a search, enter the address to be searched and click on the binoculars button beside the field for which you want to search. Searches are done on a field-by-field basis only. The results are displayed either on the In-Context Alternatives, or the Out-Of-Context Alternatives.

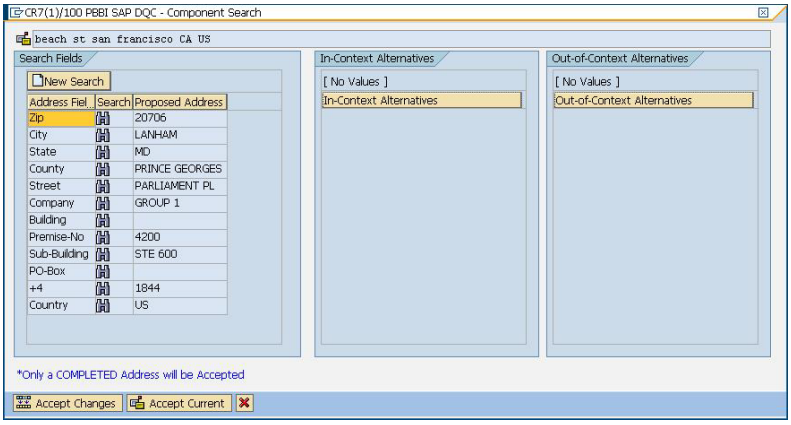


6. To commit a field, double-click an entry on the In-Context Alternatives box. Once a field is committed, the system will provide you with a list of possible entries based on what was committed. This list is based on a search hierarchy. The hierarchy is as follows:

   - Zip
   - City
   - State
   - Street
   - Company
   - Building
   - Premise-No
   - Sub-Building
   - PO-Box

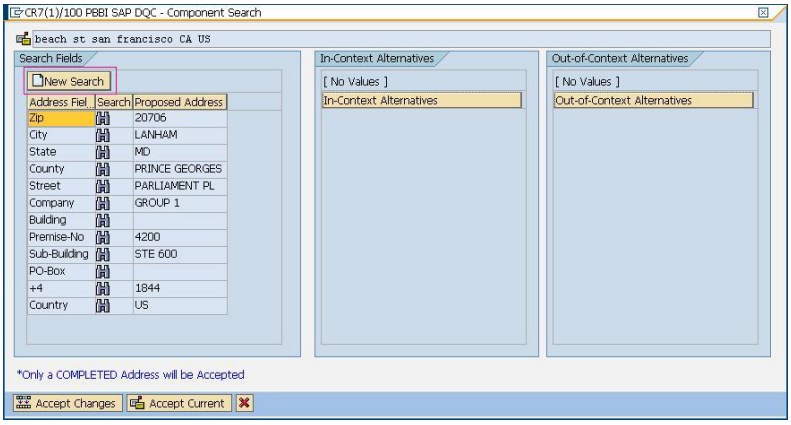
   Note: When a search is made, and there are no results matching the search criteria, the next field in the hierarchy will be returned with its possible results.

7. Continue searching until all fields are complete enough for the address to be considered a complete and valid address.



   Note: Only a Completed Address will be accepted by the system.

8. To make another search, just click the **New Search** button in the advanced search screen.



Note: You can choose a new search provided you have not selected the **Accept Changes** button. Once the **Accept Changes** button has been selected the committed address will be reflected in the create data screen.

9. Click the **Accept Changes** button to accept the validated (completed) address. Click the **Accept Current** button to accept the address you entered. Or click the red "X" to cancel the validation.

Performing Batch Address Validation

Batch address validation is the process of updating address data in a data set so that the address data is valid and cleansed. If a record has been saved with uncleansed data (e.g. lower cased address), running the batch address cleansing will automatically cleanse the record.

1. Enter the transaction code `/NSE38`.
2. In the **Program** field enter `RSADRQU1`.

   Note: This is a standard SAP program for the quarterly adjustment process.

3. Press the F8 key or click the execute icon.
4. Complete the fields to specify the records you want to include in the batch address validation.
5. Press the F8 key or click the execute icon.
6. When you see a message saying "INDX created", click the back icon until you are at the screen titled **ABAP Editor: Initial Screen**.
7. In the **Program** field enter `/HSGRP1/RSADRQU2`.
8. Press the F8 key or click the execute icon.
9. Choose one of the following options:

Address Validation Only	This will only validate and cleanse the records.
GeoTAX Validation Only	This will only perform tax jurisdiction assignments on the records. This option only works if you have the Enterprise Tax Module installed on the Spectrum™ Technology Platform server.
Address Validation and GeoTAX	This will validate, cleanse, and perform tax jurisdiction assignments on the records. This option only works if you have the Enterprise Tax Module installed on the Spectrum™ Technology Platform server.

10. Press the F8 key or click the execute icon.
11. When you see a message saying that the process has ended, click the back icon until you are at the screen titled **ABAP Editor: Initial Screen**.
12. In the **Program** field, enter `/HSGRP1/RSADRQU3`.
13. Press the F8 key or click the execute icon.
14. Press the F8 key or click the execute icon again.

Batch address validation is now complete.

Viewing the Address Validation Report

The address validation report lists address information for records that have been processed through batch and interactive address validation. The report contains information such as the address, RDI and DPV codes and whether the address is cleansed.

1. Enter the transaction code `/N/HSGRP1/MASTER`.
2. In the **By Address** and **By Address Type** sections, specify the filter criteria to use to select records to include in the report.
3. In the **By Address Status** section, select one or more of the following:

Cleansed	Check this box to include addresses that the system has validated and cleansed.
Not Yet Cleansed	Check this box to include addresses that the system has not attempted to validate or cleanse.
Differing	Check this box to include addresses that were entered into the system at a time when address validation was disabled.

4. In the **Maximum No. of Hits** field enter the maximum number of records you want to include in the report.
5. Press the F8 key or click the execute icon.

   The records that match your criteria are displayed. The **Status** column indicates the address validation status for each record.

   Table 2: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
	No address.

6. Click **Show Statistics** to view a count of the records included in the report.

Deduplication

Deduplication is the process of identifying duplicate records in a data set. The SAP modules allow you to identify duplicate business partner records based on a variety of fields. Once duplicate records are found you can then choose to ignore them or create a master record by merging information found in each duplicate.

Deduplicating a Business Partner

When you create a business partner record you can check to make sure you are not creating a duplicate of an existing business partner.

1. Enter the transaction code `/NBP` to create a new business partner.
2. Create the new business partner.

3. When you are done entering information, press the F8 key or click the check icon.
4. If the address you entered is not valid, you are prompted to choose a valid address.
5. If a record in the system is similar to the record being created, the deduplication window is displayed. This window shows the candidate duplicate or duplicates of the record you are creating.
   - Click **Continue** to ignore any duplicates displayed in the pop-up and create the new record.
   - Click **Switch to Duplicate** to display the selected candidate duplicate and cancel the creation of the current duplicate.
   - Click **Display Partner** to view the selected duplicate record. After viewing the duplicate record click the back button to return to this window.
   - Click **Create Cleansing Case** to merge the two records manually using the transaction code `/NBUPA_CLEAR`. This option allows you to choose which record is the source record and which one is the target record for the merge.
   - Click the red **X** to cancel the deduplication process.

Merging Business Partner Records

Record Merging is the process of reconciling duplicate records. Duplicate records are reconciled by merging the duplicate to the current record or by merging the current to the duplicate record.

Note: Merging is only available for Business Partner records.

1. Enter the transaction code `/N/HSGRP1/MASTER`.
2. In the **By Address** and **By Address Type** sections, specify the filter criteria to use to select records to include in the report.
3. In the **By Address Status** section, select one or more of the following:

Cleansed	Check this box to include addresses that the system has validated and cleansed.
Not Yet Cleansed	Check this box to include addresses that the system has not attempted to validate or cleanse.
Differing	Check this box to include addresses that were entered into the system at a time when address validation was disabled.

4. In the **Maximum No. of Hits** field enter the maximum number of records you want to include in the report.
5. In the **Duplicate Check Threshold** field, enter a threshold for considering two records duplicates. The threshold is a percentage that indicates the amount of similarity between two records that qualifies them to be duplicates. For example, if you enter `30,0` any records that are 30% the same will be considered duplicates. You must enter the percentage in the format *`percentage`*`,0`.
6. Press the F8 key or click the execute icon.

   The records that match your criteria are displayed. The **Status** column indicates the address validation status for each record.

   Table 3: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
	No address.

7. Click **Check for Duplicates** to view the candidate duplicate or duplicates for the selected record.

8. In the **Duplicates** window, select the record that is a duplicate of the one you selected in the main window then click one of the following buttons:

Merge Current To Duplicate	Merges the record from the main screen to the selected record in the pop-up screen.
Merge Duplicate To Current	Merges the selected record of the pop-up screen to the record of the main screen.

If the **Batch Merging** option is set to **PBBI Merge Process**, the records are merged automatically.

If the **Batch Merging** option is set to **SAP Merge Process**, the data cleansing cases are created and the cleansing case process must be done manually to complete the merge.

Note: The **Batch Merging** option can be accessed by entering transaction code `/NSPRO`, clicking **SAP Reference IMG**, then expanding **SAP NetWeaver** > **Application Server** > **Basis Services** > **Address Management** > **PBBI SAP DQC** > **Merging**.

Batch Merging Business Partner Records

Batch merge is the process of merging Business Partner candidates with corresponding duplicates. Business Partner candidates flagged for archiving are not included in the process. The merge behavior depends on whether the Merge Settings are set to Pitney Bowes Business Insight Merge Process or SAP Merge Process.

1. Enter the transaction code `/NSE38`.
2. In the **Program** field, enter `/HSGRP1/BP_MERGING`.
3. Press the F8 key or click the execute icon.
4. Enter the package size and specify whether you want the merged record to be archived.
5. Press the F8 key or click the execute icon.
6. After executing, a message confirming that batch merging has been completed is displayed.

Performing Batch Deduplication

Batch deduplication is the process of initializing the duplicate status field in the table /HSGRP1/MATCHKEY.

1. Enter the transaction code `/NSE38`.
2. In the **Program** field, enter `/HSGRP1/RSADRDEDUP`.
3. Press the F8 key or click the execute icon.
4. Enter the package size then press the F8 key or click the execute icon.

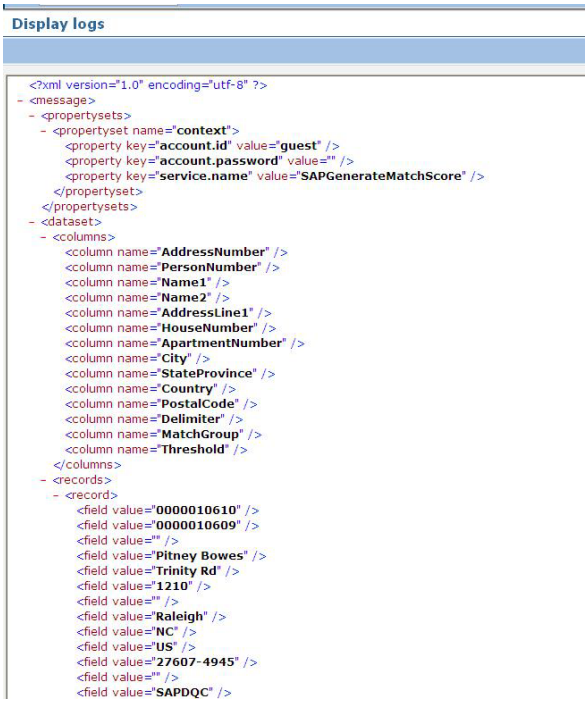
Viewing the Log

The SAP Module uses the built-in application log of SAP. To view the log entries, you can enter the transaction SLG1.

1. Enter the transaction code `SLG1`.
2. In the **Object** field, enter `/HSGRP1/DQC`.

   This is the object name used to view logs specific to Spectrum™ Technology Platform.
3. Enter any filtering criteria you want to use to limit the transactions displayed in the log.
4. Press the F8 key or click the execute icon.
5. To view the XML message passed or received by the Spectrum™ Technology Platform server, select a log and press the F7 key or click the details icon.

Note: XML message logs are created depending on the General Behavior settings.



Resynchronizing the Index Pool

Index Pool Resynchronization is the process of reinitializing the table `/HSGRP1/MATCHKEY`.

- If there are records created during a downtime of some sort, there is a possibility that the search process will not provide complete results. Upon creation, update, or search, automatic resynchronization will take place to update the index. If the number of unsync records exceeds the set threshold, you will be prompted to choose whether to continue the resync process or not.

Initializing Search Key

Search Key Initialization is the process of initializing the table `/HSGRP1/MATCHKEY`.

1. Enter the transaction code `/NSE38`.
2. In the **Program** field enter `/HSGRP1/RSADRINI`
3. Press the F8 key or click the execute icon.
4. Select the appropriate options.
5. Press the F8 key or click the execute icon.

4

Using SAP Dynpro

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- Business Partners 33
- Customers 43
- Vendor 49
- Searching for an Address with Advanced Search 52

Introduction

The Spectrum™ Technology Platform SAP Module improves the quality of you address data by providing the following functions in your SAP Dynpro environment:

- Address Cleansing—correcting address information and validating addresses against a postal database amongst partial or complete records.
- Address Duplicate Detection—identifying duplicate records in a data set for appropriate action.
- Fuzzy/Rough Search—searches for addresses that are already present on the database.
- Advanced Search—creation of new addresses by using interactive value generation and field requirements.

The diagram below shows a typical SAP NetWeaver Portal and system architecture. Note the connection to Spectrum™ Technology Platform to provide address validation.

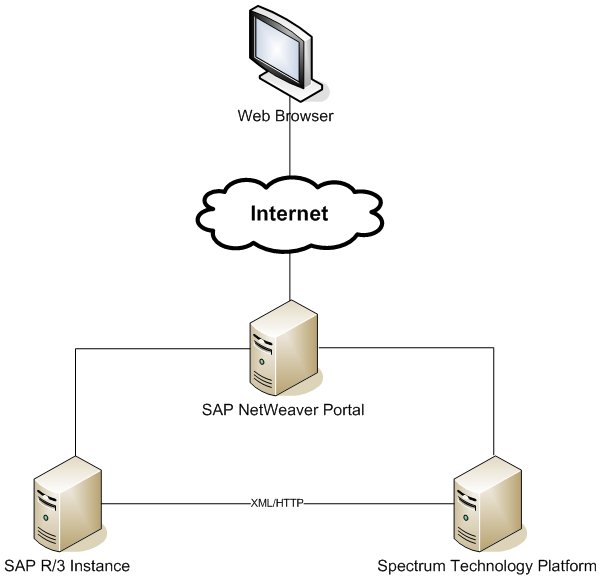


Figure 1: System Architecture

SAP NetWeaver Portal

SAP NetWeaver Portal offers a single point of access to SAP and non-SAP information sources, enterprise applications, information repositories, databases, and services inside and outside your organization through a single user experience.

SAP Server

SAP is an Enterprise Resource Planning (ERP) system.

Spectrum™ Technology Platform Server

Spectrum™ Technology Platform provides integration for end users to execute services and process data. The server is managed using .NET clients (Management Console, Interactive Driver, and Enterprise Designer). The server itself is written in Java for maximum platform support but can leverage products written in other languages by building Java-based components on top of these other products.

Business Partners

Creating a Business Partner - Person

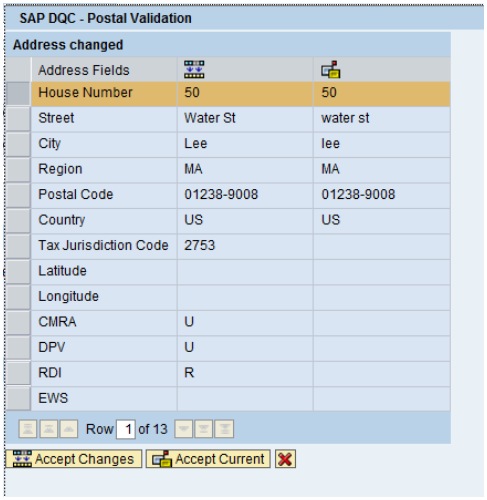
A Business Partner - Person is a record for an individual person.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Create Business Partner** then click **Person**.
3. Complete the following fields:

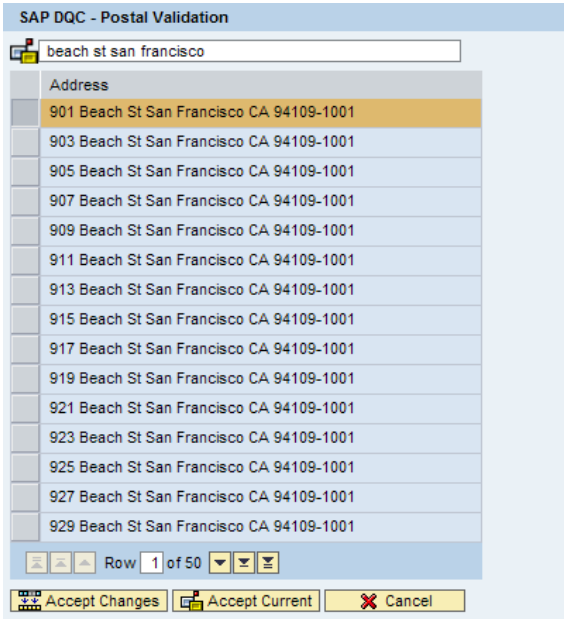
Field	Description
Title	A title of respect or professional title.
First Name	The person's given name. For example, in the name John Smith, John is the first name.
Last Name	The person's family name. For example, in the name John Smith, Smith is the last name.
Street/House Number	The person's street and house or building number. For example, 430 Main St.
City	The municipality name.
Postal Code	The postal code for the address.
Country	The country for the address.
Region	A sub-area within a country, such as a province, state, or district. You must select a country before you select a region.
Tax Jurisdiction	The proprietary codes used in ADP/Taxware tax compliance software. You can use this code in your ADP/Taxware application to find out the tax rate for the jurisdiction.
PO Box	A post office box number.
PO w/o number	Check this box if you leave the **PO Box** field blank.
Postal Code	If you are entering a PO Box address, the postal code for the address.
Latitude	The latitude of the address. The latitude is a seven-digit number in degrees, calculated to six decimal places.
Longitude	The longitude of the address. The longitude is a seven-digit number in degrees, calculated to six decimal places.
CMRA	Indicates if the address is a Commercial Mail Receiving Agency (CMRA) **Y** Yes, the address is a CMRA. **N** No, the address is not a CMRA. **U** Unconfirmed.
DPV	Indicates the results of Delivery Point Validation (DPV) processing. **Y** DPV confirmed. Mail can be delivered to the address. **N** Mail cannot be delivered to the address. **S** The building number was validated but the unit number could not be confirmed. A building number is the primary address number for a building. A unit number is a number of a distinct mailing address within a building such as an apartment, suite, floor, and so on. For example, in this address 424 is the building number and 12 is the unit number:

Field	Description
	424 Washington Blvd. Apt. 12 Oak Park IL 60302 USA
	D The building number was validated but the unit number was missing from input. A building number is the primary address number for a building. A unit number is a number of a distinct mailing address within a building such as an apartment, suite, floor, and so on. For example, in this address 424 is the building number and 12 is the unit number: 424 Washington Blvd. Apt. 12 Oak Park IL 60302 USA
	M The address matches multiple valid delivery points.
	U The address could not be confirmed because the address did not code at the ZIP + 4® level.
	V The address caused a false-positive violation.
RDI	Return values indicating address type. **B** The address is a business address. **R** The address is a residential address. **M** The address is both a residential and a business address. **null** Not checked because the address did not code at a ZIP + 4® level, or RDI™ was not performed.
EWS	The Early Warning System (EWS) uses the USPS® EWS File to validate addresses that are not in the ZIP + 4® database. One of the following: **Y** Yes, the address was validated using the EWS file. **N** No, the address was not validated using the EWS file.
Telephone	The phone number for the person. If there is an extension, enter it in the **Ext** field.
Fax	The fax number for the person. If there is an extension, enter it in the **Ext** field.
Email	The email for the person.

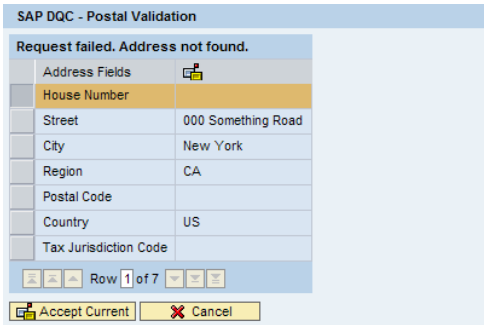
4. Click **Validate** to validate the address.
   - If the address can be validated, the Address Changed window displays. As you can see, the validated address is properly cased and the postal code has been added.



- If the address matches multiple addresses in the postal data, the Address List pop-up displays:


SAP DQC - Postal Validation
beach st san francisco
Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
921 Beach St San Francisco CA 94109-1001
923 Beach St San Francisco CA 94109-1001
925 Beach St San Francisco CA 94109-1001
927 Beach St San Francisco CA 94109-1001
929 Beach St San Francisco CA 94109-1001
Row 1 of 50
Accept Changes
Accept Current
Cancel

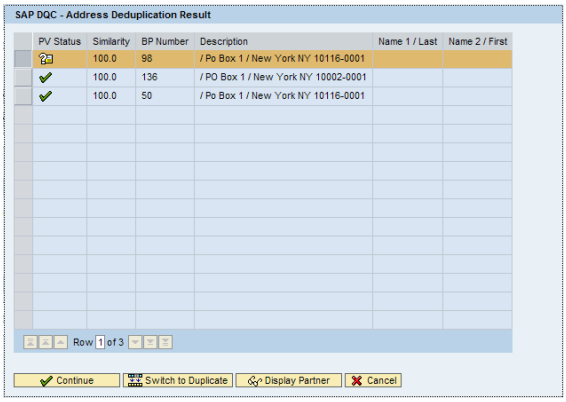
- If the address could not be validated, the Invalid Address popup is displayed:



- To use the validated address in the business parter you are creating, click **Accept Changes**.

5. Click **Deduplicate** to verify that this entry is not already in the SAP system. This helps prevent you from creating a duplicate record.

If one or more duplicate records are found, the following window is displayed:



The PV column (Postal Validation) indicates whether the address has been validated. The icons in the column are described in the following table.

Table 4: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
----	No address.

- To continue with saving the new business partner and ignore the duplicates, click **Continue**.
- To view the selected duplicate and cancel the creation of the new business partner, click **Switch to Duplicate**.
- To view the selected duplicate in a new popup window, click **Display Partner**.
- To return to the new business partner without taking any action on the duplicates, click **Cancel**.

6. After you have validated the address and checked for duplicates, click **Save**.

Creating a Business Partner - Organization

A Business Partner - Organization is a record for a company or other entity.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Create Business Partner** then click **Organization**.
3. Complete the following fields:

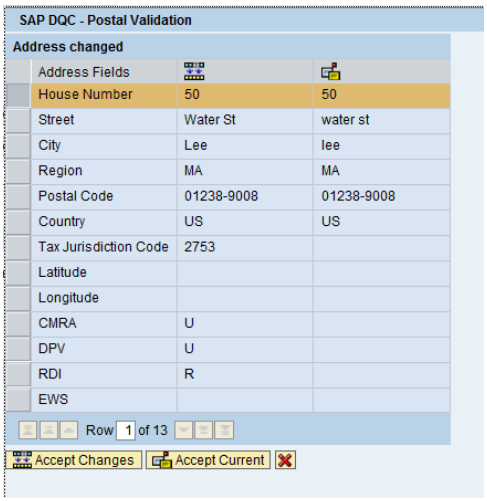
Field	Description
Title	Select **Company**.
Name	The name of the company or organization.
Street/House No.	The organization's street and house or building number. For example, 430 Main St.
City	The municipality name.
Postal Code	The postal code for the address.
Country	The country for the address.

Field	Description
Region	A sub-area within a country, such as a province, state, or district. You must select a country before you select a region.
Tax Jurisdiction	The proprietary codes used in ADP/Taxware tax compliance software. You can use this code in your ADP/Taxware application to find out the tax rate for the jurisdiction.
PO Box	A post office box number.
PO w/o number	Check this box if you leave the **PO Box** field blank.
Postal Code	If you are entering a PO Box address, the postal code for the address.
Latitude	The latitude of the address. The latitude is a seven-digit number in degrees, calculated to six decimal places.
Longitude	The longitude of the address. The longitude is a seven-digit number in degrees, calculated to six decimal places.
CMRA	Indicates if the address is a Commercial Mail Receiving Agency (CMRA) **Y** Yes, the address is a CMRA. **N** No, the address is not a CMRA. **U** Unconfirmed.
DPV	Indicates the results of Delivery Point Validation (DPV) processing. **Y** DPV confirmed. Mail can be delivered to the address. **N** Mail cannot be delivered to the address. **S** The building number was validated but the unit number could not be confirmed. A building number is the primary address number for a building. A unit number is a number of a distinct mailing address within a building such as an apartment, suite, floor, and so on. For example, in this address 424 is the building number and 12 is the unit number: 424 Washington Blvd. Apt. 12 Oak Park IL 60302 USA **D** The building number was validated but the unit number was missing from input. A building number is the primary address number for a building. A unit number is a number of a distinct mailing address within a building such as an apartment, suite, floor, and so on. For example, in this address 424 is the building number and 12 is the unit number: 424 Washington Blvd. Apt. 12 Oak Park IL 60302 USA **M** The address matches multiple valid delivery points. **U** The address could not be confirmed because the address did not code at the ZIP + 4® level. **V** The address caused a false-positive violation.
RDI	Return values indicating address type. **B** The address is a business address. **R** The address is a residential address. **M** The address is both a residential and a business address. **null** Not checked because the address did not code at a ZIP + 4® level, or RDI™ was not performed.

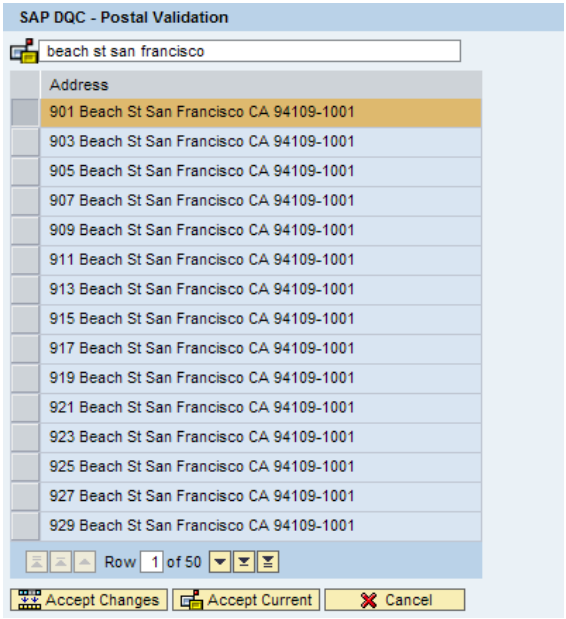
Field	Description
EWS	The Early Warning System (EWS) uses the USPS® EWS File to validate addresses that are not in the ZIP + 4® database. One of the following: **Y** Yes, the address was validated using the EWS file. **N** No, the address was not validated using the EWS file.
Telephone	The phone number for the organization. If there is an extension, enter it in the **Ext** field.
Fax	The fax number for the organization. If there is an extension, enter it in the **Ext** field.
Email	The email for the organization.

4. Click **Validate** to validate the address.

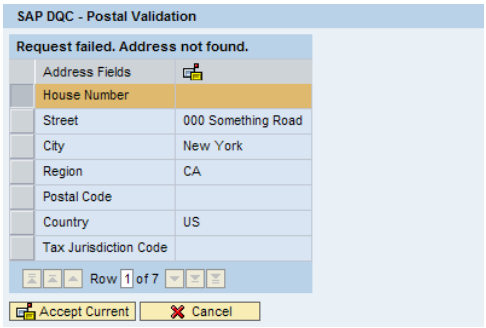
   - If the address can be validated, the Address Changed window displays. As you can see, the validated address is properly cased and the postal code has been added.



   - If the address matches multiple addresses in the postal data, the Address List pop-up displays:


SAP DQC - Postal Validation
beach st san francisco
Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
921 Beach St San Francisco CA 94109-1001
923 Beach St San Francisco CA 94109-1001
925 Beach St San Francisco CA 94109-1001
927 Beach St San Francisco CA 94109-1001
929 Beach St San Francisco CA 94109-1001
Row 1 of 50
Accept Changes
Accept Current
Cancel

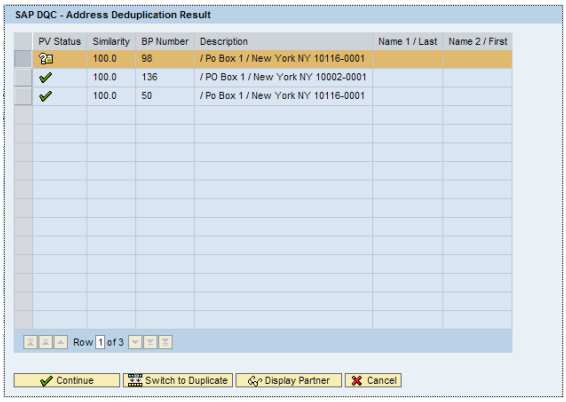
- If the address could not be validated, the Invalid Address popup is displayed:



- To use the validated address in the business parter you are creating, click **Accept Changes**.

5. Click **Deduplicate** to verify that this entry is not already in the SAP system. This helps prevent you from creating a duplicate record.

   If one or more duplicate records are found, the following window is displayed:


SAP DQC - Address Deduplication Result
PV Status
Similarity
BP Number
Description
Name 1 / Last
Name 2 / First
100.0 98 / Po Box 1 / New York NY 10116-0001
100.0 136 / PO Box 1 / New York NY 10002-0001
100.0 50 / Po Box 1 / New York NY 10116-0001
Row 1 of 3
Continue
Switch to Duplicate
Display Partner
Cancel

   The PV column (Postal Validation) indicates whether the address has been validated. The icons in the column are described in the following table.

Table 5: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
----	No address.

- To continue with saving the new business partner and ignore the duplicates, click **Continue**.
- To view the selected duplicate and cancel the creation of the new business partner, click **Switch to Duplicate**.
- To view the selected duplicate in a new popup window, click **Display Partner**.
- To return to the new business partner without taking any action on the duplicates, click **Cancel**.

6. After you have validated the address and checked for duplicates, click **Save**.

Creating a Business Partner - Group

A Business Partner - Group is similar to a Business Partner - Person except there are two names on the record. An example would be a married couple.

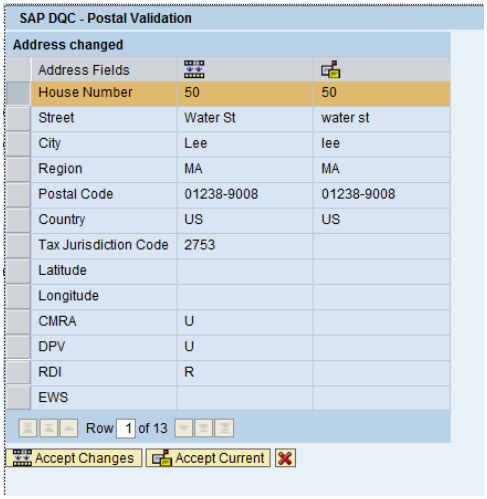
1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Create Business Partner** then click **Group**.
3. Complete the following fields:

Field	Description
Title	Optional. If desired, you may select **Mr. and Mrs.**
Name 1	The name of one of the individuals in the group.
Name 2	The name of one of the individuals in the group.
Street/House No.	The organization's street and house or building number. For example, 430 Main St.
City	The municipality name.
Postal Code	The postal code for the address.
Country	The country for the address.
Region	A sub-area within a country, such as a province, state, or district. You must select a country before you select a region.
Tax Jurisdiction	The proprietary codes used in ADP/Taxware tax compliance software. You can use this code in your ADP/Taxware application to find out the tax rate for the jurisdiction.
PO Box	A post office box number.
PO w/o number	Check this box if you leave the **PO Box** field blank.
Postal Code	If you are entering a PO Box address, the postal code for the address.
Latitude	The latitude of the address. The latitude is a seven-digit number in degrees, calculated to six decimal places.
Longitude	The longitude of the address. The longitude is a seven-digit number in degrees, calculated to six decimal places.
CMRA	Indicates if the address is a Commercial Mail Receiving Agency (CMRA) **Y** Yes, the address is a CMRA. **N** No, the address is not a CMRA. **U** Unconfirmed.
DPV	Indicates the results of Delivery Point Validation (DPV) processing. **Y** DPV confirmed. Mail can be delivered to the address. **N** Mail cannot be delivered to the address. **S** The building number was validated but the unit number could not be confirmed. A building number is the primary address number for a building. A unit number is a number of a distinct mailing address within a building such as an apartment, suite, floor, and so on. For example, in this address 424 is the building number and 12 is the unit number: 424 Washington Blvd. Apt. 12 Oak Park IL 60302 USA **D** The building number was validated but the unit number was missing from input. A building number is the primary address number for a building. A unit number is a number of a distinct mailing address within

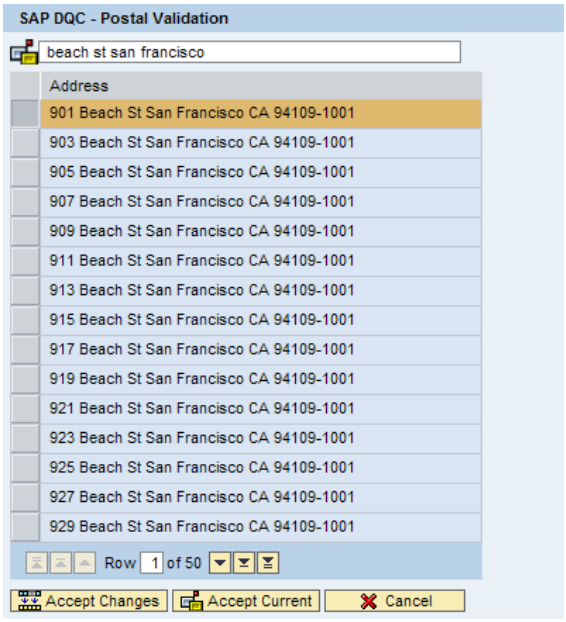
Field	Description
	a building such as an apartment, suite, floor, and so on. For example, in this address 424 is the building number and 12 is the unit number: 424 Washington Blvd. Apt. 12 Oak Park IL 60302 USA
	M The address matches multiple valid delivery points.
	U The address could not be confirmed because the address did not code at the ZIP + 4® level.
	V The address caused a false-positive violation.
RDI	Return values indicating address type.
	B The address is a business address.
	R The address is a residential address.
	M The address is both a residential and a business address.
	null Not checked because the address did not code at a ZIP + 4® level, or RDI™ was not performed.
EWS	The Early Warning System (EWS) uses the USPS® EWS File to validate addresses that are not in the ZIP + 4® database. One of the following:
	Y Yes, the address was validated using the EWS file.
	N No, the address was not validated using the EWS file.
Telephone	The phone number for the organization. If there is an extension, enter it in the **Ext** field.
Fax	The fax number for the organization. If there is an extension, enter it in the **Ext** field.
Email	The email for the organization.

4. Click **Validate** to validate the address.

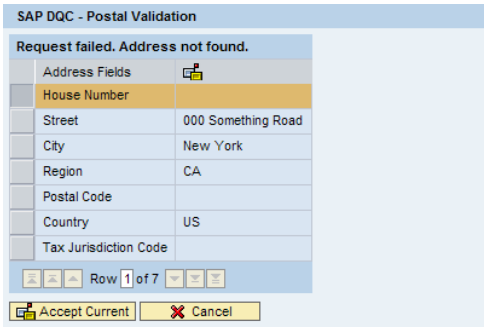
   - If the address can be validated, the Address Changed window displays. As you can see, the validated address is properly cased and the postal code has been added.



   - If the address matches multiple addresses in the postal data, the Address List pop-up displays:


SAP DQC - Postal Validation
beach st san francisco
Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
921 Beach St San Francisco CA 94109-1001
923 Beach St San Francisco CA 94109-1001
925 Beach St San Francisco CA 94109-1001
927 Beach St San Francisco CA 94109-1001
929 Beach St San Francisco CA 94109-1001
Row 1 of 50
Accept Changes
Accept Current
Cancel

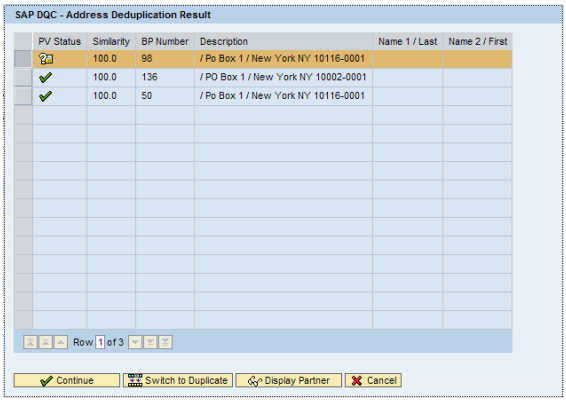
- If the address could not be validated, the Invalid Address popup is displayed:



- To use the validated address in the business parter you are creating, click **Accept Changes**.

5. Click **Deduplicate** to verify that this entry is not already in the SAP system. This helps prevent you from creating a duplicate record.

   If one or more duplicate records are found, the following window is displayed:


SAP DQC - Address Deduplication Result
PV Status Similarity BP Number Description Name 1 / Last Name 2 / First
100.0 98 / Po Box 1 / New York NY 10116-0001
100.0 136 / PO Box 1 / New York NY 10002-0001
100.0 50 / Po Box 1 / New York NY 10116-0001
Row 1 of 3
Continue
Switch to Duplicate
Display Partner
Cancel

The PV column (Postal Validation) indicates whether the address has been validated. The icons in the column are described in the following table.

Table 6: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
	No address.

- To continue with saving the new business partner and ignore the duplicates, click **Continue**.
- To view the selected duplicate and cancel the creation of the new business partner, click **Switch to Duplicate**.
- To view the selected duplicate in a new popup window, click **Display Partner**.
- To return to the new business partner without taking any action on the duplicates, click **Cancel**.

6. After you have validated the address and checked for duplicates, click **Save**.

Viewing and Modifying a Business Partner

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Display Business Partner**.
3. Enter the business partner number. If you do not know the business partner number you can look it up using the fuzzy search feature. For more information, see **Searching for a Business Partner** on page 43.
4. Click **Change**.
5. Edit the business partner. For additional information, see **Creating a Business Partner - Organization** on page 36 and **Creating a Business Partner - Person** on page 33.

Searching for a Business Partner

Error-tolerant searches allow you to find business partners even if the pieces of information are incomplete or partly wrong. The search displays a list of possible matches.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Business Partner**.
3. Click **Fuzzy/Rough Search**.
4. In the **Name** field, enter the name of the business partner you are searching for.
5. Under **Street Address**, enter as much address information as you know.
6. Click **Fuzzy/Rough Search**.

Customers

Creating a Customer - General

A Customer - General record is typically used when the customer is an entity such as a business.

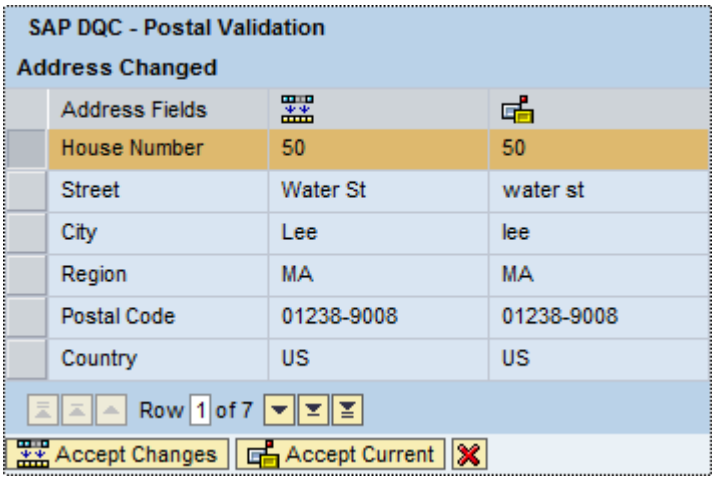
1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. At the top of the page, click **Customer**.
3. Click **Create Customer** then click **Create Customer General**.

4. Complete the following fields:

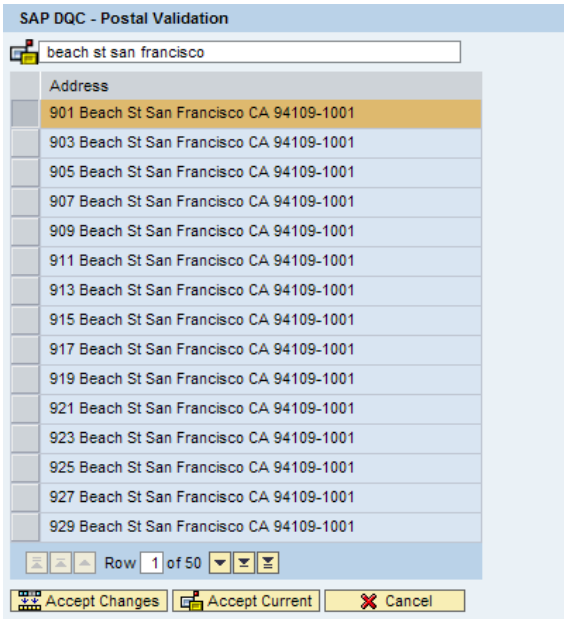
Field	Description
Title	A title of respect or professional title.
Name	If the customer is a company, enter the company name. If the customer is a person, enter the first name in the first field and the last name in the second field.
Street/House Number	The person's street and house or building number. For example, 430 Main St.
City	The municipality name.
Postal Code	The postal code for the address.
Country	The country for the address.
Region	A sub-area within a country, such as a province, state, or district. You must select a country before you select a region.
PO Box	A post office box number.
Postal Code	If you are entering a PO Box address, the postal code for the address.
Telephone	The phone number for the person. If there is an extension, enter it in the **Ext** field.
Fax	The fax number for the person. If there is an extension, enter it in the **Ext** field.
Email	The email for the person.

5. Click **Validate** to validate the address.

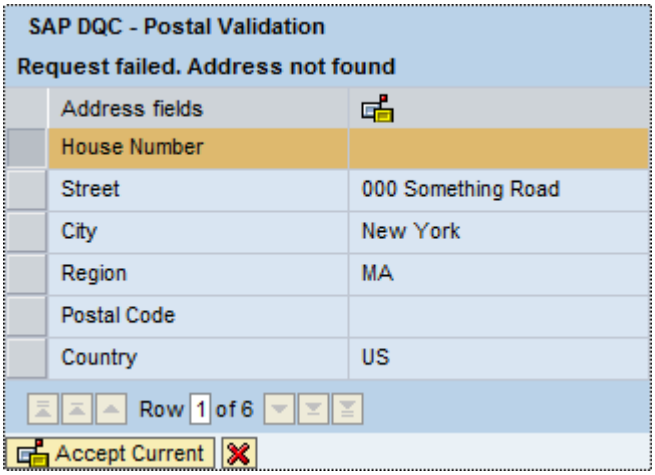
   - If the address can be validated, the Address Changed window displays. As you can see, the validated address is properly cased and the postal code has been added.



   - If the address matches multiple addresses in the postal data, the Address List pop-up displays:


SAP DQC - Postal Validation
beach st san francisco
Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
921 Beach St San Francisco CA 94109-1001
923 Beach St San Francisco CA 94109-1001
925 Beach St San Francisco CA 94109-1001
927 Beach St San Francisco CA 94109-1001
929 Beach St San Francisco CA 94109-1001
Row 1 of 50
Accept Changes
Accept Current
Cancel

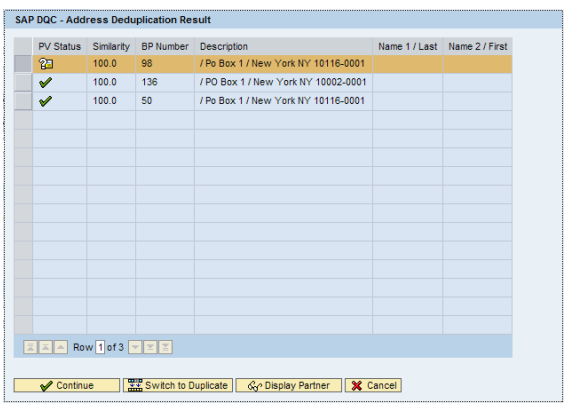
- If the address could not be validated, the Invalid Address popup is displayed:



- To use the validated address in the business partner you are creating, click **Accept Changes**.

6. Click **Deduplicate** to verify that this entry is not already in the SAP system. This helps prevent you from creating a duplicate record.

   If one or more duplicate records are found, the following window is displayed:



The PV column (Postal Validation) indicates whether the address has been validated. The icons in the column are described in the following table.

Table 7: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
	No address.

- To continue with saving the new business partner and ignore the duplicates, click **Continue**.
- To view the selected duplicate and cancel the creation of the new business partner, click **Switch to Duplicate**.
- To view the selected duplicate in a new popup window, click **Display Partner**.
- To return to the new business partner without taking any action on the duplicates, click **Cancel**.

7. After you have validated the address and checked for duplicates, click **Save**.

Creating a Customer - Consumer

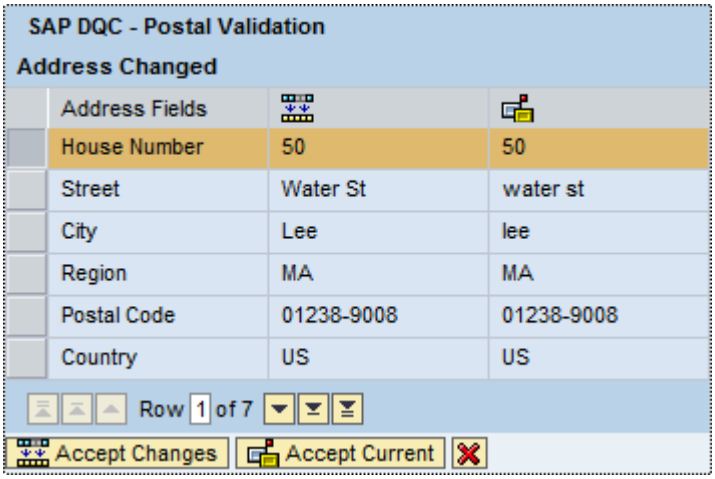
A Customer - Consumer record is for a customer that is a person rather than a company.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. At the top of the page, click **Customer**.
3. Click **Create Customer** then click **Create Customer General**.
4. Complete the following fields:

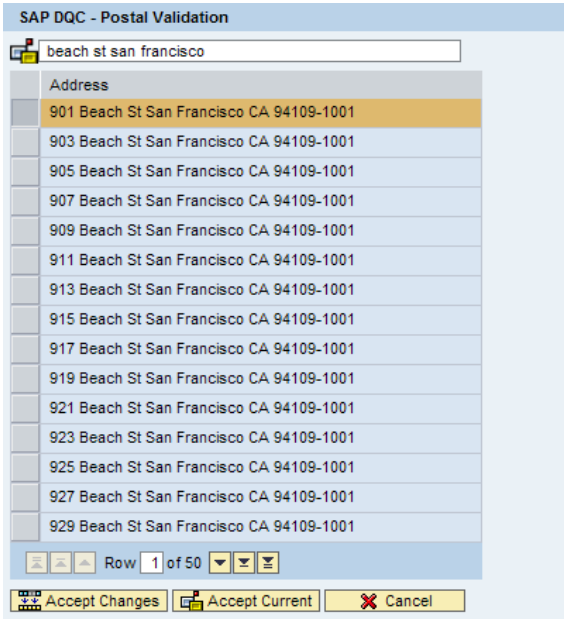
Field	Description
Title	A title of respect or professional title.
First Name	The person's given name. For example, in the name John Smith, John is the first name.
Last Name	The person's family name. For example, in the name John Smith, Smith is the last name.
Street/House Number	The person's street and house or building number. For example, 430 Main St.
City	The municipality name.
Postal Code	The postal code for the address.
Country	The country for the address.
Region	A sub-area within a country, such as a province, state, or district. You must select a country before you select a region.
PO Box	A post office box number.
Postal Code	If you are entering a PO Box address, the postal code for the address.
Telephone	The phone number for the person. If there is an extension, enter it in the **Ext** field.
Fax	The fax number for the person. If there is an extension, enter it in the **Ext** field.
Email	The email for the person.

5. Click **Validate** to validate the address.

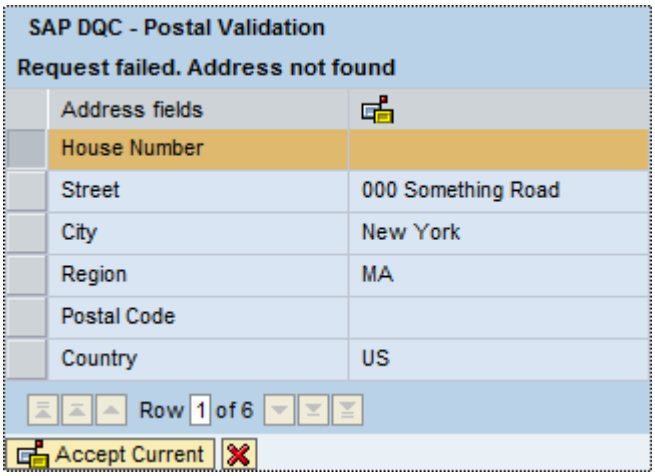
   - If the address can be validated, the Address Changed window displays. As you can see, the validated address is properly cased and the postal code has been added.



   - If the address matches multiple addresses in the postal data, the Address List pop-up displays:


SAP DQC - Postal Validation
beach st san francisco
Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
921 Beach St San Francisco CA 94109-1001
923 Beach St San Francisco CA 94109-1001
925 Beach St San Francisco CA 94109-1001
927 Beach St San Francisco CA 94109-1001
929 Beach St San Francisco CA 94109-1001
Row 1 of 50
Accept Changes
Accept Current
Cancel

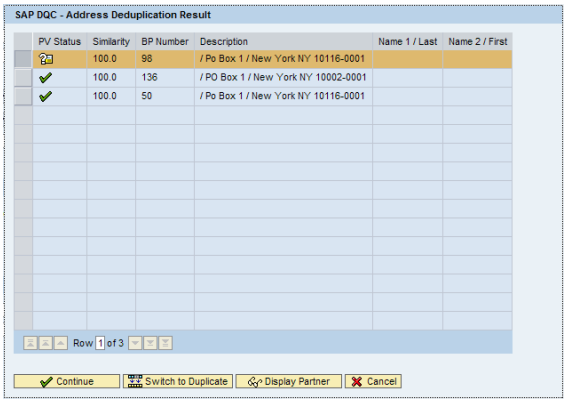
   - If the address could not be validated, the Invalid Address popup is displayed:



- To use the validated address in the business partner you are creating, click **Accept Changes**.

6. Click **Deduplicate** to verify that this entry is not already in the SAP system. This helps prevent you from creating a duplicate record.

   If one or more duplicate records are found, the following window is displayed:



   The PV column (Postal Validation) indicates whether the address has been validated. The icons in the column are described in the following table.

   Table 8: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
	No address.

   - To continue with saving the new business partner and ignore the duplicates, click **Continue**.
   - To view the selected duplicate and cancel the creation of the new business partner, click **Switch to Duplicate**.
   - To view the selected duplicate in a new popup window, click **Display Partner**.
   - To return to the new business partner without taking any action on the duplicates, click **Cancel**.

7. After you have validated the address and checked for duplicates, click **Save**.

Viewing and Modifying a Customer

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. At the top of the page, click **Customer**.
3. Click **Display Customer**.
4. Enter the customer number. If you do not know the customer number you can look it up using the fuzzy search feature. For more information, see **Searching for a Customer** on page 49.
5. Click **Change**.
6. Edit the customer. For additional information, see **Creating a Customer - General** on page 43 and **Creating a Customer - Consumer** on page 46.

Searching for a Customer

Error-tolerant searches allow you to find customers even if the pieces of information are incomplete or partly wrong. The search displays a list of possible matches.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. At the top of the page, click **Customer**
3. Click **Fuzzy/Rough Search**.
4. In the **Name** field, enter the name of the customer you are searching for.
5. Under **Street Address**, enter as much address information as you know.
6. Click **Fuzzy/Rough Search**.

Vendor

Creating a Vendor

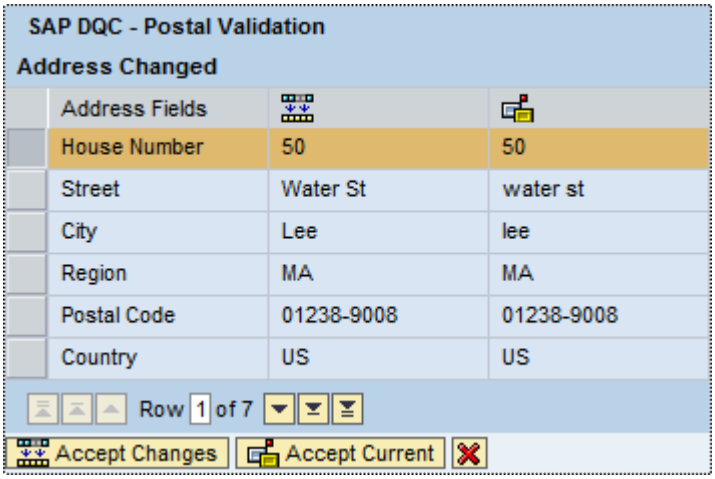
A Vendor is typically used for an individual person who acts as a vendor to your organization.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Create Vendor**.
3. Complete the following fields.

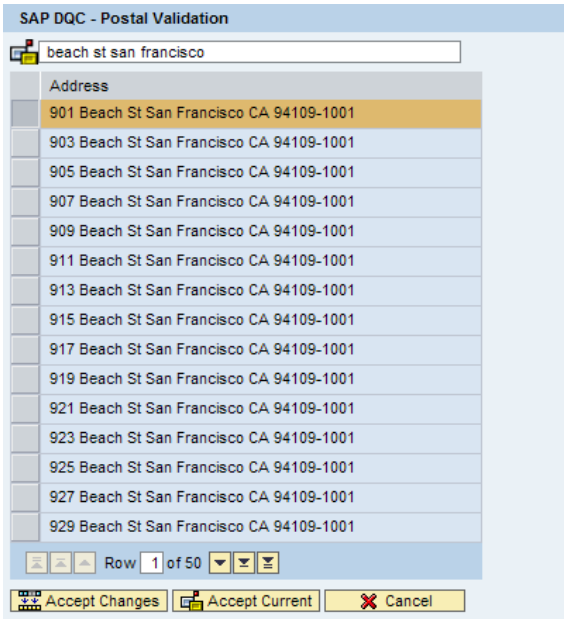
Field	Description
Title	A title of respect or a professional title. If the vendor is an organization and not a person, select Company.
Name	The name of the vendor. This can be a person or a company.
Street/House Number	The person's street and house or building number. For example, 430 Main St.
City	The municipality name.
Postal Code	The postal code for the address.
Country	The country for the address.
Region	A sub-area within a country, such as a province, state, or district. You must select a country before you select a region.
PO Box	A post office box number.
PO w/o number	Check this box if you leave the **PO Box** field blank.
Postal Code	If you are entering a PO Box address, the postal code for the address.

Field	Description
Telephone	The phone number for the person. If there is an extension, enter it in the **Ext** field.
Fax	The fax number for the person. If there is an extension, enter it in the **Ext** field.
Email	The email for the person.

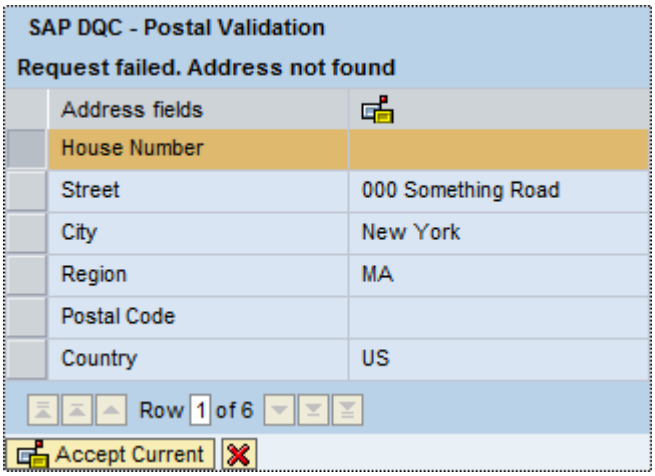
4. Click **Validate** to validate the address.
   - If the address can be validated, the Address Changed window displays. As you can see, the validated address is properly cased and the postal code has been added.



   - If the address matches multiple addresses in the postal data, the Address List pop-up displays:


SAP DQC - Postal Validation
beach st san francisco
Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
921 Beach St San Francisco CA 94109-1001
923 Beach St San Francisco CA 94109-1001
925 Beach St San Francisco CA 94109-1001
927 Beach St San Francisco CA 94109-1001
929 Beach St San Francisco CA 94109-1001
Row 1 of 50
Accept Changes
Accept Current
Cancel

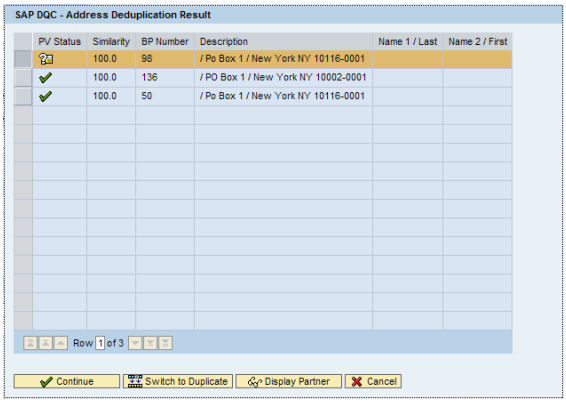
   - If the address could not be validated, the Invalid Address popup is displayed:



- To use the validated address in the business partner you are creating, click **Accept Changes**.

5. Click **Deduplicate** to verify that this entry is not already in the SAP system. This helps prevent you from creating a duplicate record.

   If one or more duplicate records are found, the following window is displayed:


SAP DQC - Address Deduplication Result
PV Status
Similarity
BP Number
Description
Name 1 / Last
Name 2 / First
100.0 98 / Po Box 1 / New York NY 10116-0001
100.0 136 / PO Box 1 / New York NY 10002-0001
100.0 50 / Po Box 1 / New York NY 10116-0001
Row 1 of 3
Continue
Switch to Duplicate
Display Partner
Cancel

   The PV column (Postal Validation) indicates whether the address has been validated. The icons in the column are described in the following table.

Table 9: Status Icons

Icon	Description
	Address has been checked and conforms to the reference data.
	Address has been checked and does not conform to the reference data. Only the user can set this status.
	Address has not been checked or it has failed cleansing.
	No address.

- To continue with saving the new business partner and ignore the duplicates, click **Continue**.
- To view the selected duplicate and cancel the creation of the new business partner, click **Switch to Duplicate**.
- To view the selected duplicate in a new popup window, click **Display Partner**.
- To return to the new business partner without taking any action on the duplicates, click **Cancel**.

6. After you have validated the address and checked for duplicates, click **Save**.

Viewing and Modifying a Vendor

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Display Vendor**.
3. Enter the vendor number. If you do not know the vendor number you can look it up using the fuzzy search feature. For more information, see **Searching for a Vendor** on page 52.
4. Click **Change**.
5. Edit the vendor. For additional information, see **Viewing and Modifying a Vendor** on page 52.

Searching for a Vendor

Error-tolerant searches allow you to find vendors even if the pieces of information are incomplete or partly wrong. The search displays a list of possible matches.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Vendor**.
3. Click **Fuzzy/Rough Search**.
4. In the **Name** field, enter the name of the vendor you are searching for.
5. Under **Street Address**, enter as much address information as you know.
6. Click **Fuzzy/Rough Search**.

Searching for an Address with Advanced Search

Advanced search helps you find an address when you only know part of the address.

Note: Advanced search is only available for addresses in Canada and the U.S. You must have licensed the Address Now Module in order to use Advanced Search.

1. In a web browser, open the Pitney Bowes Spectrum Data Quality Connector for SAP page.
2. Click **Advanced Search**.
3. Enter part of the address that you know then click the binoculars icon.

   The possible matches for your search are displayed in the **In-Context Alternatives** and **Out-of-Context Alternatives** lists. In-context results are those that are valid in combination with the address elements you have already committed, and out-of-context results are those that are not valid in combination with the elements you have already committed.

   For example, in the U.S. the following cities exist:

   In Illinois:

   - CHICAGO
   - CHICAGO HTS
   - CHICAGO RIDGE
   - NORTH CHICAGO
   - WEST CHICAGO

   In Indiana:

   - EAST CHICAGO

   In Nevada:

   - CHICAGO PARK

   If you have already committed a value of "IN" (Indiana) for the state and then searched for the city "chicago", EAST CHICAGO would be an "in context" result because it exists in Indiana, and all the other matches for "chicago" would be out-of-context results. Likewise, if you committed a value of

"IL" (Illinois) for the state, EAST CHICAGO and CHICAGO PARK would be out of context, and CHICAGO, CHICAGO HTS, CHICAGO RIDGE, NORTH CHICAGO, and WEST CHICAGO would be "in context."

4. Click the value you want in either **In Conext Alternatives** or **Out of Context Alternatives**, then click **Select in Context** or **Select Out of Context** to apply your selection to the search criteria.
5. Click the binoculars icon next to a blank field to see options for that field.
6. Continue searching until all fields are complete enough for it to be considered as a complete and valid address.

   Note: To clear your results and start over, click **New Search**.

7. To create a new record using the address, click **Create Customer**.

Advanced Search Example

The following example illustrates how to search for an address when you only know parts of the address. In this example, you know the ZIP Code, Street name, and Suite number but not the city, state,

1. In the **Zip** field, enter `60610` and click the binoculars icon.
2. Under **In Context Alternatives**, select 60610 and click **Select In Context**.
3. Click the binoculars button next to the **Street** field. A list of streets in the 60610 ZIP Code is displayed.
4. Scroll down and select N STATE ST then click **Select In Context**.
5. Click the binoculars button next to the **Premise-No** field. A list of valid building numbers for N STATE ST in the 60610 ZIP Code is displayed.
6. Select 1050 then click **Select In Context**.

5

Using the Interaction Center WebClient

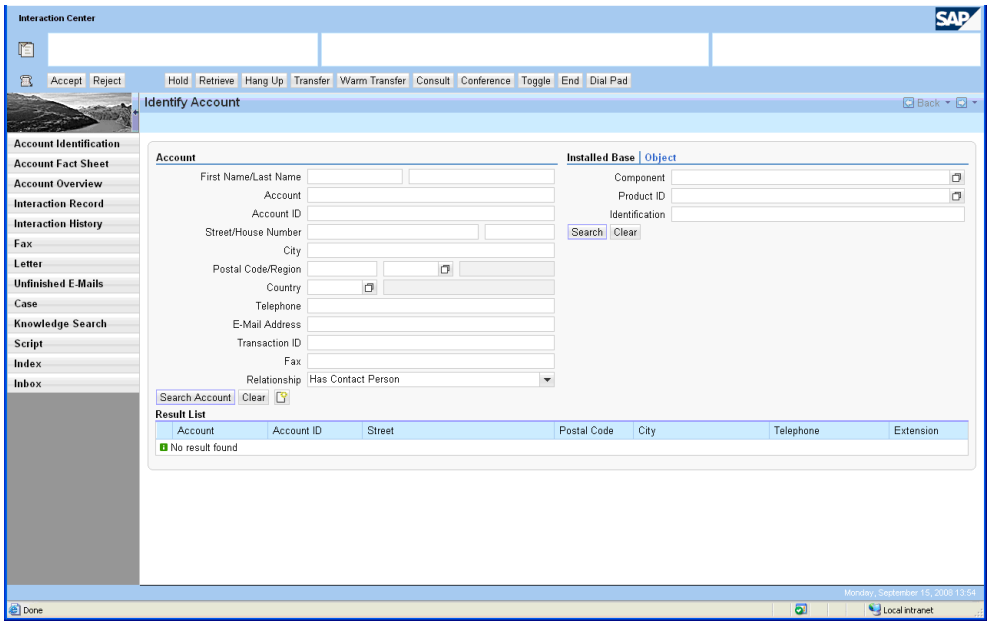
In this section:

- Searching 56
- Creating a Business Partner Account 57
- Modifying a Business Partner Account 58
- Validating an Address 58
- Data Deduplication 60

Searching

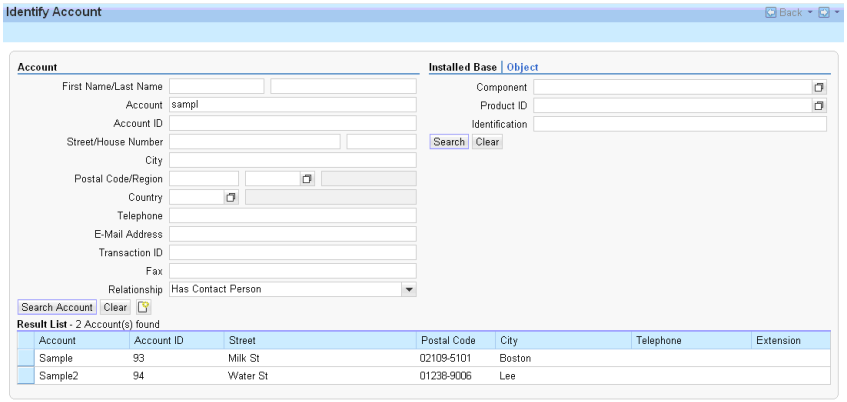
Error-tolerant search allow users to find customers, vendors, prospects, or business partners, even if the pieces of information are incomplete or partly wrong.

The querying page of CRM IC Web Client is the default page that will be loaded after you have login to IC Web Client.



Button	Function
Search Account	Perform search using the provided information
Clear	Clear all the fields
	Go to create account page

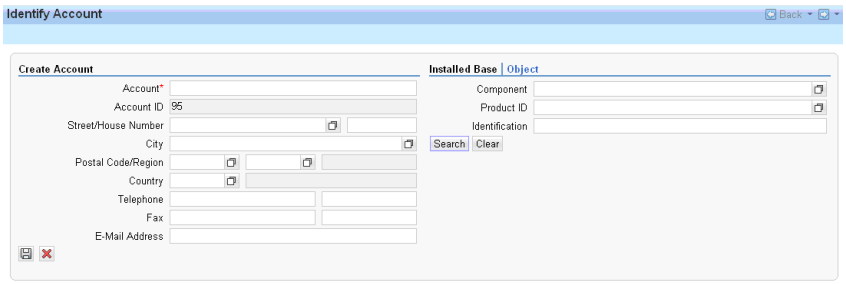
Entering any information in the search field will perform the error-tolerant search. When multiple matches were found, results will be displayed in the Result List table. When exact match was found, Modify Account page will be displayed.



Here, the user can choose (select) from the result list to display the details of the account, or simply click on Clear button to reset the search.

Creating a Business Partner Account

The Create Account page is used for creating Business Partner Account. It can be accessed by clicking the Create Account button in the search screen.

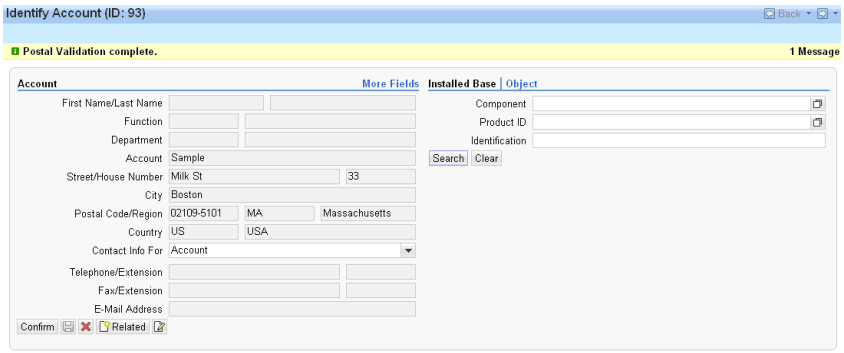


Button	Function
	Perform postal validation and data de-duplication and save the created account.
	Cancels the create account process. It will return to previous screen.
Enter	Perform postal validation and data de-duplication.

During the creation of account, Data Cleansing and Data De-duplication will be performed. For more details about Data Cleansing please refer to section 4.4 Data Cleansing and for Data De-duplication please refer to section 4.5 Data De-duplication.

Modifying a Business Partner Account

The Modify Account page is used for displaying/modifying of Business Partner Account. It can be accessed by selecting an account in search screen.



Button	Function
Confirm	Confirm the account
	Perform postal validation and data de-duplication then save the account.
	Cancels the modify account process. It will return to previous screen
Related	Create related business partner or contact person.
	Start modifying the account. This button should be clicked to enable Save button
Enter	Perform postal validation and data de-duplication.

To start modifying the account, user must click Edit button. When user have finished modifying the account and clicked the save button, Data Cleansing and Data De-duplication will be performed. For more details about Data Cleansing please refer to section 4.4 Data Cleansing and for Data De-duplication please refer to section 4.5 Data De-duplication.

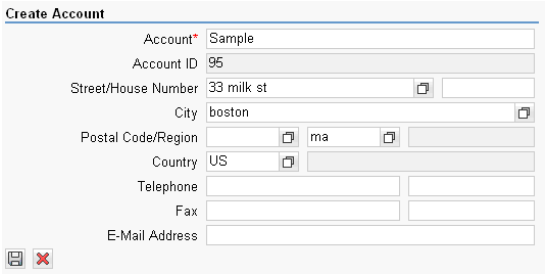
Validating an Address

When you enter an address into SAP, the SAP Module attempts to validate the address and allows you to accept or reject the validated address.

1. Enter the address data in SAP.

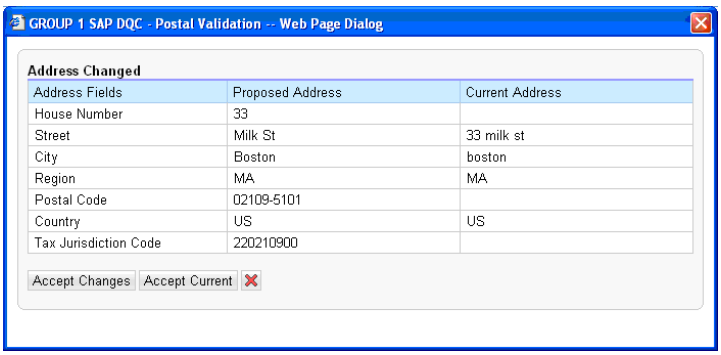
   For example:

```
33 milk st, boston, ma, US
```

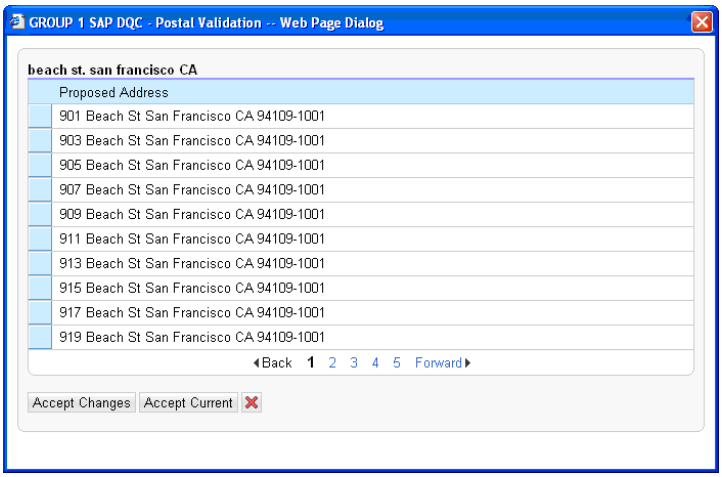


2. When you save the record, the address validation process attempts to validate the address. Depending on the result of the validation process, one of the following windows appears:

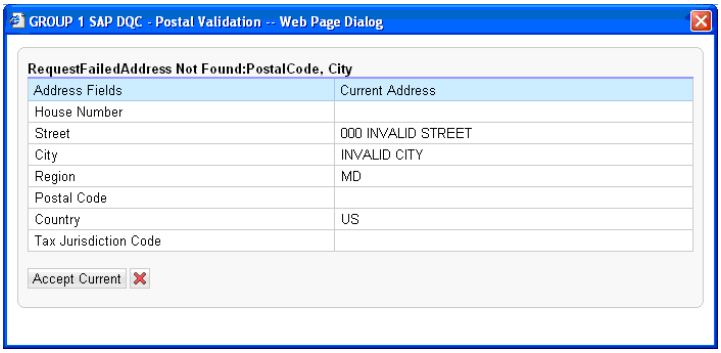
   - If the address can be validated, the Postal Validation window shows the validated (Proposed) address and the address as you entered it (Current Address).



   - If the address you entered matches to multiple addresses in the postal data, the Address List Popup displays candidate addresses.


GROUP 1 SAP DQC - Postal Validation -- Web Page Dialog
beach st. san francisco CA
Proposed Address
901 Beach St San Francisco CA 94109-1001
903 Beach St San Francisco CA 94109-1001
905 Beach St San Francisco CA 94109-1001
907 Beach St San Francisco CA 94109-1001
909 Beach St San Francisco CA 94109-1001
911 Beach St San Francisco CA 94109-1001
913 Beach St San Francisco CA 94109-1001
915 Beach St San Francisco CA 94109-1001
917 Beach St San Francisco CA 94109-1001
919 Beach St San Francisco CA 94109-1001
Back 1 2 3 4 5 Forward
Accept Changes
Accept Current

   - If the address cannot be validated, the Invalid Entry Popup displays with the appropriate error message.

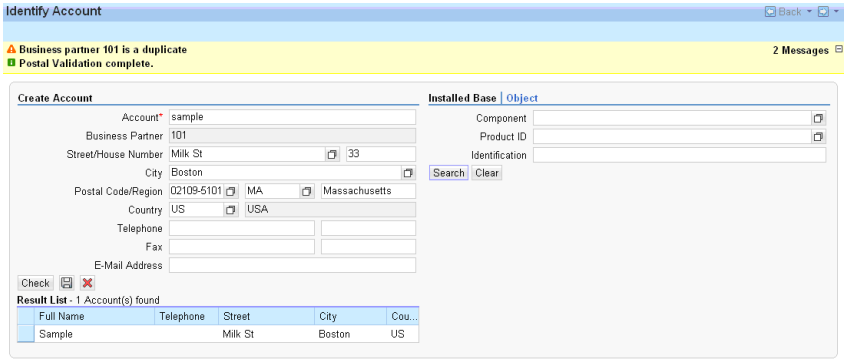


3. Choose the action you want to perform:
   - Click **Accept Changes** to accept the address in the Proposed Address column.
   - Click **Accept Current** to accept the address in the Current Address column.
   - Click to cancel the validation.

Data Deduplication

Data deduplication is the process of identifying duplicate records in a data set. These duplicate records will be presented to the user so that appropriate action (i.e. ignore or choose duplicate record) can be taken.

If a record in the system is similar with the record being created, Data deduplication takes place after address validation. The duplicate result list shows the candidate duplicate or duplicates of the record being created.



Button	Function
Check	Check if the modified information still contains duplicates.
	Pushes through with the creation of the current record
	Cancels deduplication and account creation.
Enter	Same as Check button

User can select the candidate duplicate by clicking on the Result List table. When a duplicate was selected, it will cancel the creation of current account.

A

Country ISO Codes and Module Support

In this section:

- Country ISO Codes and Module Support 64

Country ISO Codes and Module Support

The following table lists the ISO codes for each country as well as the modules that support addressing, geocoding, and routing for each country.

Note that the Enterprise Geocoding Module includes databases for Africa (30 countries), Middle East (8 countries) and Latin America (20 countries). These databases cover the smaller countries in those regions that do not have their own country-specific geocoding databases. The Supported Modules column indicates which countries are covered by these Africa, Middle East, and Latin America databases.

Also, the Geocode Address World database provides geographic and limited postal geocoding (but not street-level geocoding) for all countries.

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Afghanistan	AF	AFG	Address Now Module Universal Addressing Module
Aland Islands	AX	ALA	Address Now Module Universal Addressing Module
Albania	AL	ALB	Address Now Module Universal Addressing Module
Algeria	DZ	DZA	Address Now Module Universal Addressing Module
American Samoa	AS	ASM	Address Now Module Universal Addressing Module
Andorra	AD	AND	Address Now Module Enterprise Geocoding Module[1] Universal Addressing Module GeoComplete Module
Angola	AO	AGO	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Anguilla	AI	AIA	Address Now Module Universal Addressing Module
Antarctica	AQ	ATA	Address Now Module Universal Addressing Module
Antigua And Barbuda	AG	ATG	Address Now Module Universal Addressing Module
Argentina	AR	ARG	Address Now Module Enterprise Geocoding Module Universal Addressing Module

[1] Andorra is covered by the Spain geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Armenia	AM	ARM	Address Now Module Universal Addressing Module
Aruba	AW	ABW	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Australia	AU	AUS	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Austria	AT	AUT	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Azerbaijan	AZ	AZE	Address Now Module Universal Addressing Module
Bahamas	BS	BHS	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Bahrain	BH	BHR	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module
Bangladesh	BD	BGD	Address Now Module Universal Addressing Module
Barbados	BB	BRB	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Belarus	BY	BLR	Address Now Module Universal Addressing Module
Belgium	BE	BEL	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Belize	BZ	BLZ	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Benin	BJ	BEN	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Bermuda	BM	BMU	Address Now Module Universal Addressing Module
Bhutan	BT	BTN	Address Now Module Universal Addressing Module
Bolivia, Plurinational State Of	BO	BOL	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Bonaire, Saint Eustatius And Saba	BQ	BES	Address Now Module Universal Addressing Module
Bosnia And Herzegovina	BA	BIH	Address Now Module Universal Addressing Module
Botswana	BW	BWA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Bouvet Island	BV	BVT	Address Now Module Universal Addressing Module
Brazil	BR	BRA	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
British Indian Ocean Territory	IO	IOT	Address Now Module Universal Addressing Module
Brunei Darussalam	BN	BRN	Address Now Module Universal Addressing Module
Bulgaria	BG	BGR	Address Now Module Universal Addressing Module
Burkina Faso	BF	BFA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Burundi	BI	BDI	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Cambodia	KH	KHM	Address Now Module Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Cameroon	CM	CMR	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Canada	CA	CAN	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Cape Verde	CV	CPV	Address Now Module Universal Addressing Module
Cayman Islands	KY	CYM	Address Now Module Universal Addressing Module
Central African Republic	CF	CAF	Address Now Module Universal Addressing Module
Chad	TD	TCD	Address Now Module Universal Addressing Module
Chile	CL	CHL	Address Now Module Enterprise Geocoding Module Universal Addressing Module GeoComplete Module
China	CN	CHN	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Christmas Island	CX	CXR	Address Now Module Universal Addressing Module
Cocos (Keeling) Islands	CC	CCK	Address Now Module Universal Addressing Module
Colombia	CO	COL	Address Now Module Universal Addressing Module
Comoros	KM	COM	Address Now Module Universal Addressing Module
Congo	CG	COG	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Congo, The Democratic Republic Of The	CD	COD	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Cook Islands	CK	COK	Address Now Module Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Costa Rica	CR	CRI	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Côte d'Ivoire	CI	CIV	Address Now Module Universal Addressing Module
Croatia	HR	HRV	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Cuba	CU	CUB	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Curacao	CW	CUW	Address Now Module Universal Addressing Module
Cyprus	CY	CYP	Address Now Module Universal Addressing Module
Czech Republic	CZ	CZE	Address Now Module Enterprise Geocoding Module Universal Addressing Module GeoComplete Module
Denmark	DK	DNK	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Djibouti	DJ	DJI	Address Now Module Universal Addressing Module
Dominica	DM	DMA	Address Now Module Universal Addressing Module
Dominican Republic	DO	DOM	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Ecuador	EC	ECU	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Egypt	EG	EGY	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
El Salvador	SV	SLV	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Equatorial Guinea	GQ	GNQ	Address Now Module Universal Addressing Module
Eritrea	ER	ERI	Address Now Module Universal Addressing Module
Estonia	EE	EST	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Ethiopia	ET	ETH	Address Now Module Universal Addressing Module
Falkland Islands (Malvinas)	FK	FLK	Address Now Module Universal Addressing Module
Faroe Islands	FO	FRO	Address Now Module Universal Addressing Module
Fiji	FJ	FJI	Address Now Module Universal Addressing Module
Finland	FI	FIN	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
France	FR	FRA	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
French Guiana	GF	GUF	Address Now Module Enterprise Geocoding Module [2] Universal Addressing Module
French Polynesia	PF	PYF	Address Now Module Universal Addressing Module
French Southern Territories	TF	ATF	Address Now Module Universal Addressing Module
Gabon	GA	GAB	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module

[2] French Guiana is covered by the France geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Gambia	GM	GMB	Address Now Module Universal Addressing Module
Georgia	GE	GEO	Address Now Module Universal Addressing Module
Germany	DE	DEU	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Ghana	GH	GHA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Gibraltar	GI	GIB	Address Now Module Enterprise Geocoding Module [3]Universal Addressing Module
Greece	GR	GRC	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Greenland	GL	GRL	Address Now Module Universal Addressing Module
Grenada	GD	GRD	Address Now Module Universal Addressing Module
Guadeloupe	GP	GLP	Address Now Module Enterprise Geocoding Module [4] Universal Addressing Module
Guam	GU	GUM	Address Now Module Universal Addressing Module
Guatemala	GT	GTM	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Guernsey	GG	GGY	Address Now Module Universal Addressing Module
Guinea	GN	GIN	Address Now Module Universal Addressing Module
Guinea-Bissau	GW	GNB	Address Now Module Universal Addressing Module

[3] Gibraltar is covered by the Spain geocoder
[4] Guadeloupe is covered by the France geocode

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Guyana	GY	GUY	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Haiti	HT	HTI	Address Now Module Universal Addressing Module
Heard Island and McDonald Islands	HM	HMD	Address Now Module Universal Addressing Module
Holy See (Vatican City State)	VA	VAT	Address Now Module Enterprise Geocoding Module [5] Universal Addressing Module
Honduras	HN	HND	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Hong Kong	HK	HKG	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Hungary	HU	HUN	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Iceland	IS	ISL	Address Now Module Universal Addressing Module
India	IN	IND	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Indonesia	ID	IDN	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Iran, Islamic Republic Of	IR	IRN	Address Now Module Universal Addressing Module
Iraq	IQ	IRQ	Address Now Module Universal Addressing Module
Ireland	IE	IRL	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module

[5] The Vatican is covered by the Italy geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Isle Of Man	IM	IMN	Address Now Module Universal Addressing Module
Israel	IL	ISR	Address Now Module Universal Addressing Module
Italy	IT	ITA	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Jamaica	JM	JAM	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Japan	JP	JPN	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Jersey	JE	JEY	Address Now Module Universal Addressing Module
Jordan	JO	JOR	Address Now Module Universal Addressing Module
Kazakhstan	KZ	KAZ	Address Now Module Universal Addressing Module
Kenya	KE	KEN	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Kiribati	KI	KIR	Address Now Module Universal Addressing Module
Korea, Democratic People's Republic Of	KP	PRK	Address Now Module Universal Addressing Module
Korea, Republic Of	KR	KOR	Address Now Module Universal Addressing Module
Kosovo	KS	KOS	Address Now Module Universal Addressing Module GeoComplete Module
Kuwait	KW	KWT	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Kyrgyzstan	KG	KGZ	Address Now Module Universal Addressing Module
Lao People's Democratic Republic	LA	LAO	Address Now Module Universal Addressing Module
Latvia	LV	LVA	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Lebanon	LB	LBN	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module
Lesotho	LS	LSO	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Liberia	LR	LBR	Address Now Module Universal Addressing Module
Libyan Arab Jamahiriya	LY	LBY	Address Now Module Universal Addressing Module
Liechtenstein	LI	LIE	Address Now Module Enterprise Geocoding Module [6] Enterprise Routing Module Universal Addressing Module GeoComplete Module
Lithuania	LT	LTU	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Luxembourg	LU	LUX	Address Now Module Enterprise Geocoding Module [7] Enterprise Routing Module Universal Addressing Module GeoComplete Module
Macao	MO	MAC	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Macedonia, Former Yugoslav Republic Of	MK	MKD	Address Now Module Universal Addressing Module
Madagascar	MG	MDG	Address Now Module Universal Addressing Module

[6] Liechtenstein is covered by the Switzerland geocoder
[7] Luxembourg is covered by the Belgium geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Malawi	MW	MWI	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Malaysia	MY	MYS	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Maldives	MV	MDV	Address Now Module Universal Addressing Module
Mali	ML	MLI	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Malta	ML	MLT	Address Now Module Universal Addressing Module
Marshall Islands	MH	MHL	Address Now Module Universal Addressing Module
Martinique	MQ	MTQ	Address Now Module Enterprise Geocoding Module Guadeloupe is covered by the France geocode Universal Addressing Module
Mauritania	MR	MRT	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Mauritius	MU	MUS	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Mayotte	YT	MYT	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Mexico	MX	MEX	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Micronesia, Federated States Of	FM	FSM	Address Now Module Universal Addressing Module
Moldova, Republic Of	MD	MDA	Address Now Module Universal Addressing Module

[8] Martinique is covered by the France geocoder.
[9] Mayotte is covered by the France geocoder.

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Monaco	MC	MCO	Address Now Module Enterprise Geocoding Module [10]Universal Addressing Module
Mongolia	MN	MNG	Address Now Module Universal Addressing Module
Montenegro	ME	MNE	Address Now Module Universal Addressing Module
Montserrat	MS	MSR	Address Now Module Universal Addressing Module
Morocco	MA	MAR	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Mozambique	MZ	MOZ	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Myanmar	MM	MMR	Address Now Module Universal Addressing Module
Namibia	NA	NAM	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Nauru	NR	NRU	Address Now Module Universal Addressing Module
Nepal	NP	NPL	Address Now Module Universal Addressing Module
Netherlands	NL	NLD	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
New Caledonia	NC	NCL	Address Now Module Universal Addressing Module
New Zealand	NZ	NZL	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Nicaragua	NI	NIC	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module

[10] Monaco is covered by the France geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Niger	NE	NER	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Nigeria	NG	NGA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Niue	NU	NIU	Address Now Module Universal Addressing Module
Norfolk Island	NF	NFK	Address Now Module Universal Addressing Module
Northern Mariana Islands	MP	MNP	Address Now Module Universal Addressing Module
Norway	NO	NOR	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Oman	OM	OMN	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module
Pakistan	PK	PAK	Address Now Module Universal Addressing Module
Palau	PW	PLW	Address Now Module Universal Addressing Module
Palestinian Territory, Occupied	PS	PSE	Address Now Module Universal Addressing Module
Panama	PA	PAN	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Papua New Guinea	PG	PNG	Address Now Module Universal Addressing Module
Paraguay	PY	PRY	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Peru	PE	PER	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Philippines	PH	PHL	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Pitcairn	PN	PCN	Address Now Module Universal Addressing Module
Poland	PL	POL	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Portugal	PT	PRT	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Puerto Rico	PR	PRI	Address Now Module Universal Addressing Module
Qatar	QA	QAT	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module
Reunion	RE	REU	Address Now Module Enterprise Geocoding Module [11]Universal Addressing Module
Romania	RO	ROU	Address Now Module Universal Addressing Module Enterprise Routing Module
Russian Federation	RU	RUS	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Rwanda	RW	RWA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Saint Barthelemy	BL	BLM	Address Now Module Universal Addressing Module
Saint Helena, Ascension & Tristan Da Cunha	SH	SHE	Address Now Module Universal Addressing Module

[11] Reunion is covered by the France geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Saint Kitts and Nevis	KN	KNA	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Saint Lucia	LC	LCA	Address Now Module Universal Addressing Module
Saint Martin (French Part)	MF	MAF	Address Now Module Universal Addressing Module
Saint Pierre and Miquelon	PM	SPM	Address Now Module Universal Addressing Module
Saint Vincent And The Grenadines	VC	VCT	Address Now Module Universal Addressing Module
Samoa	WS	WSM	Address Now Module Universal Addressing Module
San Marino	SM	SMR	Address Now Module Enterprise Geocoding Module [12] Universal Addressing Module
Sao Tome And Principe	ST	STP	Address Now Module Universal Addressing Module
Saudi Arabia	SA	SAU	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module
Senegal	SN	SEN	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Serbia	RS	SRB	Address Now Module Universal Addressing Module
Seychelles	SC	SYC	Address Now Module Universal Addressing Module
Sierra Leone	SL	SLE	Address Now Module Universal Addressing Module
Singapore	SG	SGP	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Sint Maarten (Dutch Part)	SX	SXM	Universal Addressing Module

[12] San Marino is covered by the Italy geocoder

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Slovakia	SK	SVK	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Slovenia	SI	SVN	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Solomon Islands	SB	SLB	Address Now Module Universal Addressing Module
Somalia	SO	SOM	Address Now Module Universal Addressing Module
South Africa	ZA	ZAF	Address Now Module Enterprise Geocoding Module Universal Addressing Module GeoComplete Module
South Georgia And The South Sandwich Islands	GS	SGS	Address Now Module Enterprise Geocoding Module Universal Addressing Module
South Sudan	SS	SSD	Address Now Module Universal Addressing Module
Spain	ES	ESP	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Sri Lanka	LK	LKA	Address Now Module Universal Addressing Module
Sudan	SD	SDN	Address Now Module Universal Addressing Module
Suriname	SR	SUR	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Svalbard And Jan Mayen	SJ	SJM	Address Now Module Universal Addressing Module
Swaziland	SZ	SWZ	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Sweden	SE	SWE	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Switzerland	CH	CHE	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
Syrian Arab Republic	SY	SYR	Address Now Module Universal Addressing Module
Taiwan, Province of China	TW	TWN	Address Now Module Universal Addressing Module
Tajikistan	TJ	TJK	Address Now Module Universal Addressing Module
Tanzania, United Republic Of	TZ	TZA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Thailand	TH	THA	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module
Timor-Leste	TL	TLS	Address Now Module Universal Addressing Module
Togo	TG	TGO	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Tokelau	TK	TKL	Address Now Module Universal Addressing Module
Tonga	TO	TON	Address Now Module Universal Addressing Module
Trinidad and Tobago	TT	TTO	Address Now Module Enterprise Geocoding Module (Latin America) Universal Addressing Module
Tunisia	TN	TUN	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Turkey	TR	TUR	Address Now Module Enterprise Geocoding Module Enterprise Routing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
			Universal Addressing Module GeoComplete Module
Turkmenistan	TM	TKM	Address Now Module Universal Addressing Module
Turks And Caicos Islands	TC	TCA	Address Now Module Universal Addressing Module
Tuvalu	TV	TUV	Address Now Module Universal Addressing Module
Uganda	UG	UGA	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Ukraine	UA	UKR	Address Now Module Enterprise Geocoding Module Universal Addressing Module
United Arab Emirates	AE	ARE	Address Now Module Enterprise Geocoding Module (Middle East) Universal Addressing Module
United Kingdom	GB	GBR	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
United States	US	USA	Address Now Module Enterprise Geocoding Module Enterprise Routing Module Universal Addressing Module GeoComplete Module
United States Minor Outlying Islands	UM	UMI	Address Now Module Universal Addressing Module
Uruguay	UY	URY	Address Now Module Enterprise Geocoding Module Universal Addressing Module
Uzbekistan	UZ	UZB	Address Now Module Universal Addressing Module
Vanuatu	VU	VUT	Address Now Module Universal Addressing Module
Venezuela, Bolivarian Republic Of	VE	VEN	Address Now Module Enterprise Geocoding Module Universal Addressing Module

ISO Country Name	ISO 3116-1 Alpha-2	ISO 3116-1 Alpha-3	Supported Modules
Viet Nam	VN	VNM	Address Now Module Universal Addressing Module
Virgin Islands, British	VG	VGB	Address Now Module Universal Addressing Module
Virgin Islands, U.S.	VI	VIR	Address Now Module Universal Addressing Module
Wallis and Futuna	WF	WLF	Address Now Module Universal Addressing Module
Western Sahara	EH	ESH	Address Now Module Universal Addressing Module
Yemen	YE	YEM	Address Now Module Universal Addressing Module
Zambia	ZM	ZMB	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module
Zimbabwe	ZW	ZWE	Address Now Module Enterprise Geocoding Module (Africa) Universal Addressing Module

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